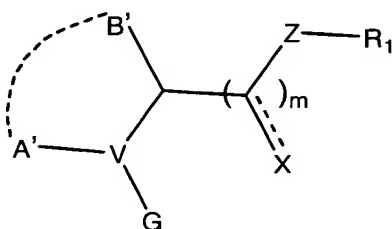


I claim:

1. A method for the prevention or treatment of sensorineural hearing loss which comprises administering to a warm-blooded animal a sensorineurotrophic compound of the formula (I'):



(I')

wherein

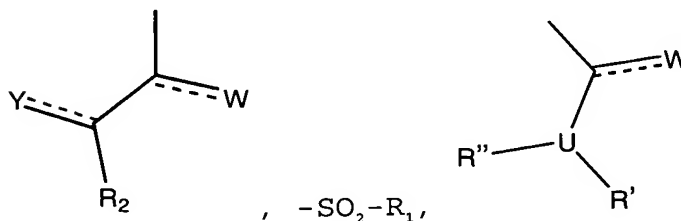
A' is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl;

B' is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or,

A' and B', taken together with the atoms to which they are attached, form a 5-7 membered saturated, unsaturated or aromatic heterocyclic or carbocyclic ring which contains one or more additional O, C(R<sub>1</sub>)<sub>2</sub>, S(O)<sub>p</sub>, N, NR<sub>1</sub>, or NR<sub>5</sub> atoms;

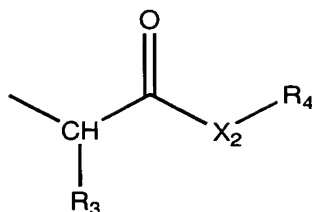
V is CH, S, or N;

G is



each  $R_1$ , independently, is hydrogen,  $C_1-C_9$  straight or branched chain alkyl, or  $C_2-C_9$  straight or branched chain alkenyl or alkynyl,  $C_3-C_9$  cycloalkyl,  $C_5-C_9$  cycloalkenyl, a carboxylic acid or carboxylic acid isostere,  $N(R_4)_n$ ,  $Ar_1$ ,  $Ar_4$  or K-L wherein said alkyl, cycloalkyl, cycloalkenyl, alkynyl, alkenyl,  $Ar_1$  or  $Ar_4$  is optionally substituted with one or more substituent(s) independently selected from the group consisting of:

2-furyl, 2-thienyl, pyridyl, phenyl,  $C_3-C_6$  cycloalkyl wherein said furyl, thienyl, pyridyl, phenyl or cycloalkyl group optionally is substituted with  $C_1-C_4$  alkoxy,  $(Ar_1)_n$ , halo, halo- $C_1-C_6$ -alkyl, carbonyl, thiocarbonyl,  $C_1-C_6$  thioester, cyano, imino,  $COOR_6$  in which  $R_6$  is  $C_1-C_9$  straight or branched chain alkyl or alkenyl, hydroxy, nitro, trifluoromethyl,  $C_1-C_6$  alkoxy,  $C_2-C_4$  alkenyloxy,  $C_1-C_6$  alkylaryloxy  $C_1-C_6$  aryloxy, aryl- $(C_1-C_6)$ -alkyloxy, phenoxy, benzyloxy, thio- $(C_1-C_6)$ -alkyl,  $C_1-C_6$ -alkylthio, sulfhydryl, sulfonyl, amino,  $(C_1-C_6)$ -mono- or di-alkylamino, amino- $(C_1-C_6)$ -alkyl, aminocarboxy,  $C_3-C_8$  cycloalkyl,  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl optionally substituted with  $(Ar_1)_n$ ,  $C_3-C_8$  cycloalkyl,  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl substituted with  $C_3-C_8$  cycloalkyl,  $C_3-C_8$  cycloalkyl, and  $Ar_2$ , and, wherein any carbon atom of an alkyl or alkenyl group may optionally be replaced with O,  $NR_5$ , or  $S(O)_p$ ; or,  $R_1$  is a moiety of the formula:



wherein:

5         $\text{R}_3$  is  $\text{C}_1\text{-C}_9$  straight or branched chain alkyl which is optionally substituted with  $\text{C}_3\text{-C}_8$  cycloalkyl or  $\text{Ar}_1$ ;

10        $\text{X}_2$  is O or  $\text{NR}_6$ , wherein  $\text{R}_6$  is selected from the group consisting of hydrogen,  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl, and  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl;

15        $\text{R}_4$  is selected from the group consisting of phenyl, benzyl,  $\text{C}_1\text{-C}_5$  straight or branched chain alkyl,  $\text{C}_2\text{-C}_5$  straight or branched chain alkenyl,  $\text{C}_1\text{-C}_5$  straight or branched chain alkyl substituted with phenyl, and  $\text{C}_2\text{-C}_5$  straight or branched chain alkenyl substituted with phenyl;

20        $\text{R}_2$  is  $\text{C}_1\text{-C}_9$  straight or branched chain alkyl,  $\text{C}_2\text{-C}_9$  straight or branched chain alkenyl,  $\text{C}_3\text{-C}_8$  cycloalkyl,  $\text{C}_5\text{-C}_7$  cycloalkenyl or  $\text{Ar}_1$ , wherein said alkyl, alkenyl, cycloalkyl, or cycloalkenyl is optionally substituted with one  
 25       or more substituents selected from the group consisting of  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl,  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl,  $\text{C}_3\text{-C}_8$  cycloalkyl,  $\text{C}_5\text{-C}_7$  cycloalkenyl,  $(\text{Ar}_1)_n$  and hydroxy; or,  
 30

$R_2$  is either hydrogen or P; Y is either oxygen or CH-P, provided that if  $R_2$  is hydrogen, then Y is CH-P, or if Y is oxygen then  $R_2$  is P;

5        P is hydrogen, O-( $C_1$ - $C_4$  straight or branched chain alkyl), O-( $C_2$ - $C_4$  straight or branched chain alkenyl),  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_5$ - $C_7$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl  
10       substituted with  $C_1$ - $C_4$  straight or branched chain alkyl or  $C_2$ - $C_4$  straight or branched chain alkenyl, ( $C_1$ - $C_4$  alkyl or  $C_2$ - $C_4$  alkenyl)- $Ar_5$ , or  $Ar_5$

15        $Ar_1$  or  $Ar_2$ , independently, is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is optionally substituted with one or more substituent(s) independently selected from the  
20       group consisting of halo, hydroxy, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl,  $C_1$ - $C_4$  alkoxy,  $C_2$ - $C_4$  alkenyloxy, phenoxy,  
25       benzyloxy, and amino; wherein the individual ring contains 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S, and, wherein any  
30       aromatic or tertiary alkylamine is optionally oxidized to a corresponding N-oxide;

$m$  is 0 or 1

35        $n$  is 1 or 2;



p is 0, 1, or 2;

t is 0, 1, 2, 3, or 4;

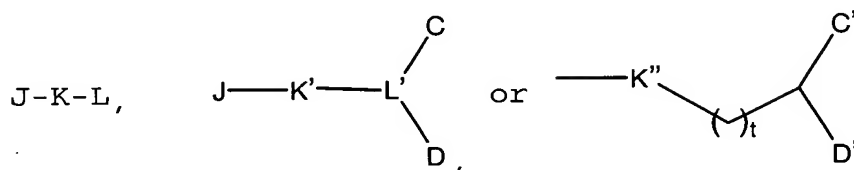
5

X is O, CH<sub>2</sub> or S;

W and Y, independently, are O, S, CH<sub>2</sub> or H<sub>2</sub>;

10

Z is C(R<sub>1</sub>)<sub>2</sub>, O, S, a direct bond or NR<sub>1</sub>; or, Z-R<sub>1</sub> is



wherein:

15

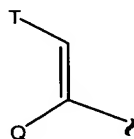
C and D are, independently, hydrogen, Ar<sub>4</sub>, Ar<sub>1</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, Ar<sub>1</sub> and Ar<sub>4</sub>; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, haloalkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub> ester, C<sub>1</sub>-C<sub>6</sub> thioester, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub> alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or

30

alkenyl is optionally replaced with O, NR<sub>5</sub>, or (SO)<sub>p</sub>;

5 C' and D' are independently hydrogen, Ar<sub>5</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>5</sub>, wherein, one or two carbon atom(s) of said  
10 alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or

15



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
20 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

T is Ar<sub>5</sub> or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group  
25 consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl  
J is O, NR<sub>1</sub>, S, or (CR<sub>1</sub>)<sub>2</sub>;

30 K is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more

substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>8</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar<sub>3</sub>; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub> is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub> is optionally replaced with O, NR''', or S(O)<sub>p</sub>;

K' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, haloalkyl, thiocarbonyl, ester, thioester, alkoxy, alkenoxy, cyano, nitro, imino, alkylamino, aminoalkyl, sulfhydryl, thioalkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>, S(O)<sub>p</sub>;

K'' is C(R<sub>1</sub>)<sub>2</sub>, O, S, a direct bond or NR<sub>1</sub>,

R''' is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring,

wherein said ring is optionally fused to an Ar<sub>3</sub> group;

5 L is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide; said aromatic amine being selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, and isoquinolinyl, said aromatic amine being optionally substituted with one or  
10 more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; and wherein  
15 said tertiary amine is NR<sub>x</sub>R<sub>y</sub>R<sub>z</sub>, wherein R<sub>x</sub>, R<sub>y</sub>, and R<sub>z</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar<sub>3</sub>; wherein said  
25 alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar<sub>3</sub> is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
30 cycloalkyl, cycloalkenyl, or Ar<sub>3</sub> is optionally replaced with O, NR', S(O)<sub>p</sub>;

35 L' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said

- alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, haloalkyl, thiocarbonyl, ester, thioester, alkoxy, alkenoxy, cyano, nitro, imino, alkylamino, aminoalkyl, sulfhydryl, thioalkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>, S(O)<sub>p</sub>
- Ar<sub>3</sub> is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; or,
- Ar<sub>4</sub> is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is optionally substituted with one or more substituent(s) independently selected from the group consisting of alkylamino, amido, amino, aminoalkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, ester, formanilido, halo, haloalkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thioalkyl, thiocarbonyl, thiocyano, thioester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual alicyclic or aromatic ring contains 5-8 members and wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group

consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

- 5         $\text{Ar}_5$  is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring  
10        sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein  $\text{Ar}_5$  optionally contains 1-3  
15        substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro,  $\text{CF}_3$ , trifluoromethoxy,  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl,  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl,  $\text{O-(C}_1\text{-C}_4$   
20        straight or branched chain alkyl),  $\text{O-(C}_2\text{-C}_4$  straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;
- 25         $\text{R}_5$  is selected from the group consisting of hydrogen,  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl,  $\text{C}_3\text{-C}_6$  straight or branched chain alkenyl or alkynyl, and  $\text{C}_1\text{-C}_4$  bridging alkyl wherein a bridge is formed between the nitrogen and  
30        carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an  $\text{Ar}_4$  or  $\text{Ar}_1$  group;

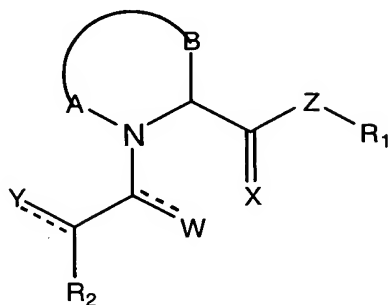
U is either O or N, provided that:

when U is O, then R' is a lone pair of electrons and R'' is selected from the group consisting of Ar<sub>4</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and

when U is N, then R' and R'' are, independently, selected from the group consisting of hydrogen, Ar<sub>4</sub>, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, a C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R' and R'' are taken together to form a heterocyclic 5- or 6-membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine; or,

a pharmaceutically acceptable salt, ester or solvate thereof.

2. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula I:



(I)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either 0 or S;

15            Z is either S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

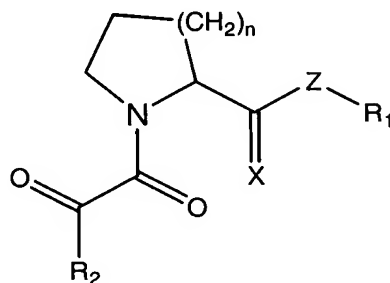
$n$  is 1 or 2;



$R_2$  is either  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, or  $Ar_1$ , wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either  
5 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_2$ - $C_4$  straight or branched chain alkenyl, and hydroxy; and

$Ar_1$  and  $Ar_2$  are independently an alicyclic or  
10 aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain  
15 alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_1$ - $C_4$  alkoxy,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N,  
20 and S.

3. A method as claimed in Claim 2 in which the sensorineurotrophic compound is a compound of formula II:



(II)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

n is 1 or 2;

X is O or S;

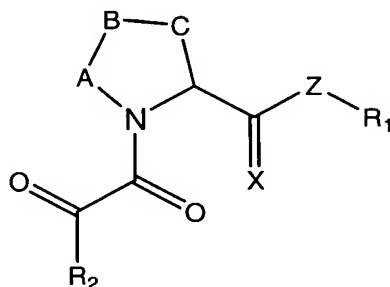
Z is selected from the group consisting of S, CH<sub>2</sub>, CHR<sub>1</sub>, and CR<sub>1</sub>R<sub>3</sub>;

5        R<sub>1</sub> and R<sub>3</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, and Ar<sub>1</sub>, wherein said alkyl, alkenyl or Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently  
10        selected from the group consisting of halo, nitro, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, amino, and Ar<sub>1</sub>;

      R<sub>2</sub> is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub>  
15        straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>; and

      Ar<sub>1</sub> is phenyl, benzyl, pyridyl, fluorenyl, thioindolyl or naphthyl, wherein said Ar<sub>1</sub> is  
20        unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, trifluoromethyl, hydroxy, nitro, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
25        phenoxy, benzyloxy, and amino.

4. A method as claimed in Claim 2 in which the sensorineurotrophic compound is a compound of formula III:



(III)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

10 A, B, and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is O or S;

Z is S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

15 R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

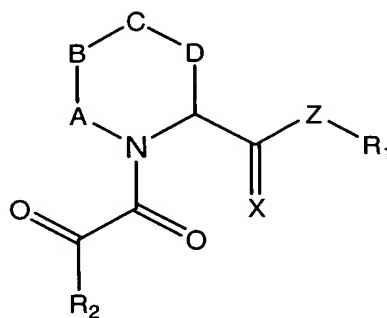
n is 1 or 2;

25 R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more

substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

5. A method as claimed in Claim 2 in which the sensorineurotrophic compound is a compound of formula IV:



(IV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B, C and D are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is O or S;

Z is S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

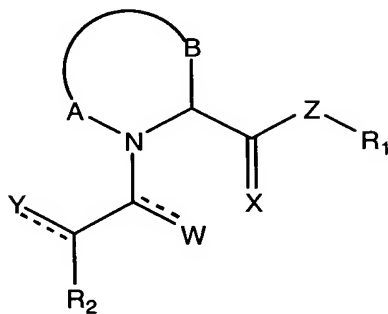
$R_1$  and  $R_3$  are independently  $C_1$ - $C_6$  straight or branched chain alkyl or  $C_2$ - $C_6$  straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected  
5 from the group consisting of  $(Ar_1)_n$ ,  $C_1$ - $C_6$  straight or branched chain alkyl or  $C_2$ - $C_6$  straight or branched chain alkenyl substituted with  $(Ar_1)_n$ ,  $C_3$ - $C_8$  cycloalkyl,  $C_1$ - $C_6$  straight or branched chain alkyl or  $C_2$ - $C_6$  straight or branched chain alkenyl substituted with  $C_3$ - $C_8$  cycloalkyl,  
10 and  $Ar_2$ ;

$n$  is 1 or 2;

$R_2$  is either  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl or  $Ar_1$ , wherein said alkyl,  
15 alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of  $C_3$ - $C_8$  cycloalkyl,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_2$ - $C_4$  straight or branched chain alkenyl,  
20 and hydroxyl; and

$Ar_1$  and  $Ar_2$  are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently  
25 selected from the group consisting of halo, hydroxyl, nitro, trifluoro-methyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_1$ - $C_4$  alkoxy,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and  
30 wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

6. A method as claimed in Claim 1 in which the sensorineurotrophic agent may be a compound of formula VI:



(VI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

X is O or S;

Z is O, NH or NR<sub>1</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

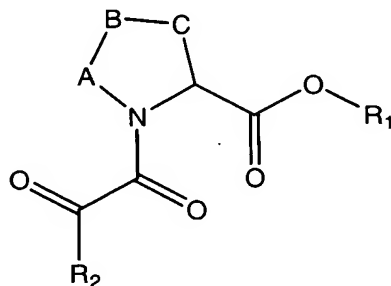
R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either  
5 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or  
10 aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
15 alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N,  
20 and S.

7. The method of Claim 6 in which the sensorineurotrophic compound is a compound of formula VII:



(VII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

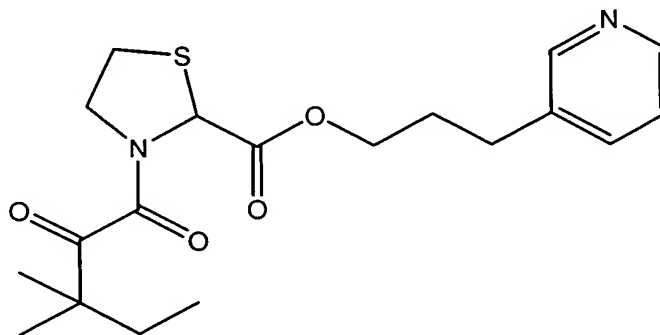
R<sub>1</sub> is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, which is substituted  
5 with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub> and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>;

n is 1 or 2;

10 R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>; and

Ar<sub>1</sub> is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
15 is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
20 phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

25 8. The method of Claim 7 in which the sensorineurotrophic compound is:





9. A method as claimed in Claim 7 in which:

A is CH<sub>2</sub>;

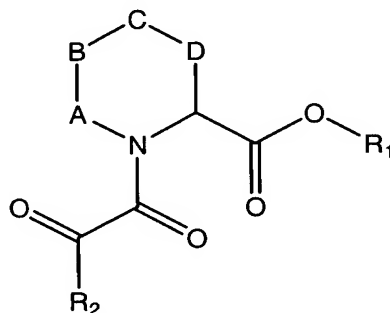
B is CH<sub>2</sub> or S;

C is CH<sub>2</sub> or NH;

5 R<sub>1</sub> is selected from the group consisting of 3-phenylpropyl and 3-(3-pyridyl)propyl; and

R<sub>2</sub> is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, and *tert*-butyl.

10 10. A method as claimed in Claim 6 in which the sensorineurotrophic compound is a compound of formula VIII:



(VIII)

15

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B, C and D are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

20

R<sub>1</sub> is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub> and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain

25

alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>; and

Ar<sub>1</sub> is an alicyclic or aromatic, mono-, bi- or  
5 tricyclic, carbo- or heterocyclic ring, wherein the ring  
is either unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-  
C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
10 branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
phenoxy, benzyloxy, and amino; wherein the individual  
ring size is 5-8 members; and wherein the heterocyclic  
ring contains 1-6 heteroatom(s) independently selected  
from the group consisting of O, N, and S.

15

11. A method of Claim 10 in which:

A is CH<sub>2</sub>;

B is CH<sub>2</sub>;

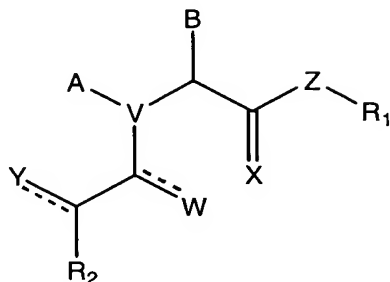
C is S, O or NH;

20 D is CH<sub>2</sub>;

R<sub>1</sub> is selected from the group consisting of 3-phenylpropyl and (3,4,5-trimethoxy)phenylpropyl; and

R<sub>2</sub> is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, *tert*-butyl, phenyl, and  
25 3,4,5-trimethoxyphenyl.

12. A method as claimed in Claim 1 in which the sensorineurotrophic agent may be a compound of formula IX:



(IX)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;

wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

X is O or S;

5 Z is O, NH or NR<sub>1</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected  
10 from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
15 and Ar<sub>2</sub>;

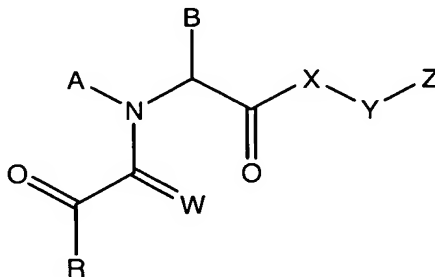
n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said  
20 alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

25 Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl,  
30 nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s)

independently selected from the group consisting of O, N, and S.

13. A method as claimed in Claim 1 in which the  
5 sensorineurotrophic compound is a compound of formula X:



(X)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

- 10 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing one or more heteroatom(s) independently selected from the group consisting of CH, CH<sub>2</sub>, O, S, SO,  
15 SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

- R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted  
20 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

- Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or  
25 more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;  
5 wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-  
10 C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
15 cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
20 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized  
25 to a corresponding N-oxide;

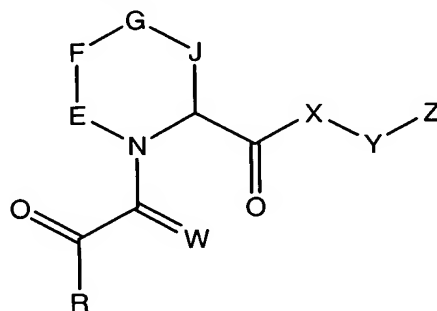
said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently  
30 selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

said tertiary amine is  $\text{NR}_4\text{R}_5\text{R}_6$ , wherein  $\text{R}_4$ ,  $\text{R}_5$ , and  $\text{R}_6$  are independently selected from the group consisting of  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl or  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl,  $\text{C}_3$ - $\text{C}_8$  cycloalkyl,  $\text{C}_5$ - $\text{C}_7$  cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with  $\text{C}_1$ - $\text{C}_4$  alkyl,  $\text{C}_2$ - $\text{C}_4$  alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH,  $\text{NR}_1$ , S, SO, or  $\text{SO}_2$ ;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$\text{R}_1$  and  $\text{R}_3$  are independently hydrogen,  $\text{C}_1$ - $\text{C}_4$  straight or branched chain alkyl,  $\text{C}_3$ - $\text{C}_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

14. A method as claimed in Claim 13 in which the sensorineurotrophic compound is a compound of formula XI:



(XI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
5 straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

10 Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one or more substituent(s) independently selected from the group consisting of  
15 hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

20 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched  
25 chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen;  
30 wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>



straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said  
5 ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

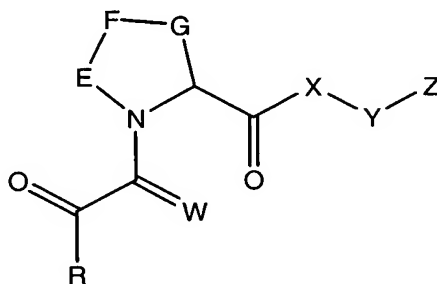
said aromatic amine is pyridyl, pyrimidyl, quinolinyl, and isoquinolinyl, which is either  
10 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
15 phenoxy, benzyloxy, and amino;

said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl  
20 is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

30 Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$R_1$  and  $R_3$  are independently hydrogen,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_3$ - $C_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 15. A method as claimed in Claim 13 in which the sensorineurotrophic compound is a compound of formula XII:



(XII)

- 10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently  $CH_2$ , O, S, SO,  $SO_2$ , NH or  $NR_1$ ;

W is O, S,  $CH_2$ , or  $H_2$ ;

- 15 R is  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, or  $Ar_1$ , which is optionally substituted with one or more substituent(s) independently selected from the group consisting of  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl, hydroxy,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, and  $Ar_1$ ;
- 20

$Ar_1$  is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s)

- 25 independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted  
5 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl,  
10 cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

15 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain  
20 containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

said aromatic amine is pyridyl, pyrimidyl,  
25 quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
30 branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

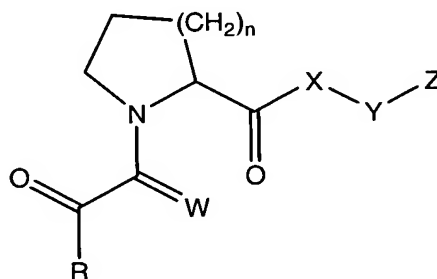
said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight

or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
5 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of  
10 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

15 R<sub>1</sub> and R<sub>3</sub> are independently hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

16. A method as Claimed in Claim 13 in which the  
20 sensorineurotrophic compound is a compound of formula XIII:



(XIII)

or a pharmaceutically acceptable salt, ester, or solvate  
25 thereof, wherein:

n is 1, 2, or 3, forming a 5-7 member heterocyclic ring;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected  
5 from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-  
10 pyridyl and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy,  
15 benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted  
20 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub>  
25 alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

30 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain

containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

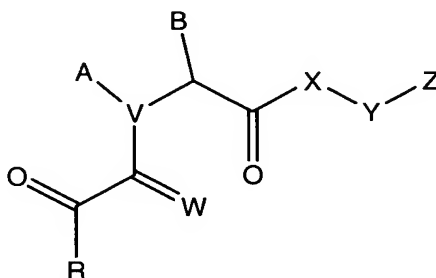
5        said aromatic amine is pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-  
10 C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

      said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of  
15 C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
20 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

      Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

30        R<sub>1</sub> and R<sub>3</sub>, independently, are hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

17. A method as claimed in Claim 1 in which the sensorineurotrophic agent may be a compound of formula XIV:



(XIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>7</sub>;

R<sub>7</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R<sub>7</sub> is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;

wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

5 R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl,  
10 hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or  
15 more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

20 X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected  
25 from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub>  
30 alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;



R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

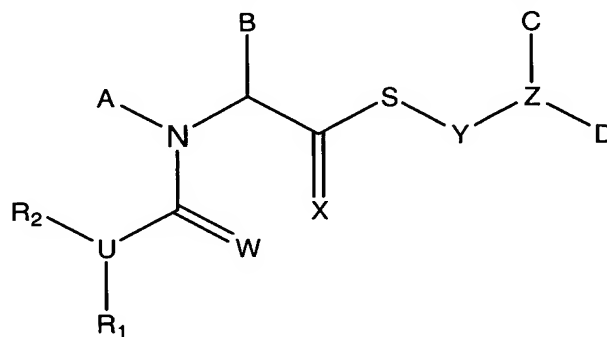
10 said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy,  
15 nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of  
20 C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub>  
25 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
30 cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$R_1$  and  $R_3$  are independently hydrogen,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_3$ - $C_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 18. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula XV:



(XV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more additional heteroatom(s) independently selected from the group consisting of O, S, SO,  $SO_2$ , N, NH, and  $NR_3$ ;

X is either O or S;

Y is a direct bond,  $C_1$ - $C_6$  straight or branched chain alkyl, or  $C_2$ - $C_6$  straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo- $C_1$ - $C_6$ -alkyl, thiocarbonyl,  $C_1$ - $C_6$ -ester, thio- $C_1$ - $C_6$ -ester,  $C_1$ - $C_6$ -alkoxy,  $C_2$ - $C_6$ -alkenoxy, cyano, nitro, imino,  $C_1$ - $C_6$ -alkylamino, amino- $C_1$ - $C_6$ -alkyl, sulfhydryl, thio- $C_1$ - $C_6$ -alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH,  $NR_3$ , S, SO, or  $SO_2$ ;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

5           C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
10 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy,  
15 C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein  
20 any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

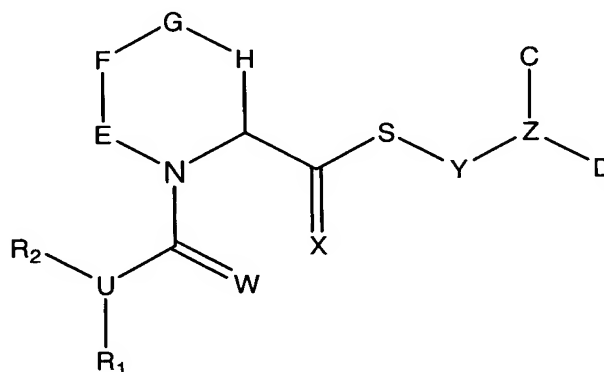
U is either O or N, provided that:

25           when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more  
30           substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and  
            when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub>

straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

19. A method as claimed in Claim 18 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

20. A method as claimed in Claim 18 in which the sensorineurotrophic compound is a compound of formula XVI:



(XVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH, or NR<sub>3</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
5 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
10 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
15 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
20 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain  
25 alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso,  
30 phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8

members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a  
5 corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
10 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
15 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
25 thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or  
30 alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

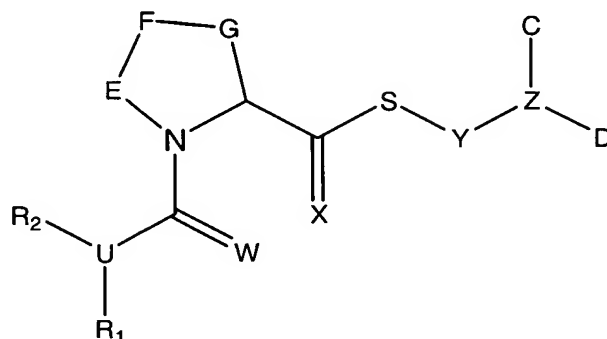
U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons  
and R<sub>2</sub> is selected from the group consisting of Ar,  
C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
5 alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
alkenyl, wherein said alkyl or alkenyl is  
optionally substituted with one or more  
substituent(s) independently selected from the  
group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and  
10 when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently,  
selected from the group consisting of hydrogen,  
Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic  
carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,  
and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
15 wherein said alkyl or alkenyl is optionally  
substituted with one or more substituent(s)  
independently selected from the group consisting  
of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken  
together to form a heterocyclic 5 or 6 membered  
20 ring selected from the group consisting of  
pyrrolidine, imidazolidine, pyrazolidine,  
piperidine, and piperazine.

21. A method as claimed in Claim 20 in which Ar is  
25 selected from the group consisting of phenyl, benzyl,  
naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl,  
purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl,  
imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.



22. A method as claimed in Claim 18 in which the sensorineurotrophic compound is a compound of formula XVII:



(XVII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH, and NR<sub>3</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain

containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

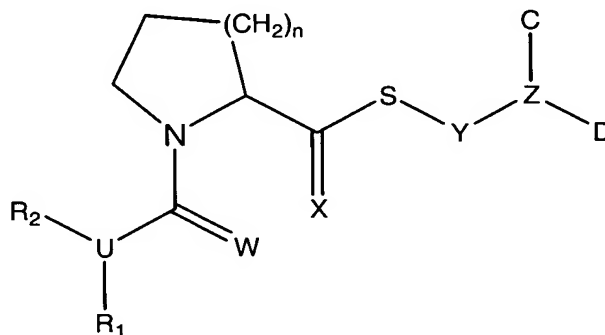
U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s)

independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of  
5 pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

23. A method as claimed in Claim 22 in which Ar is selected from the group consisting of phenyl, benzyl,  
10 naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

24. A method as claimed in Claim 1 in which the  
15 sensorineurotrophic compound is a compound of formula XVIII:



(XVIII)

20 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

n is 1, 2 or 3;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
25 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,

thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
5 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
10 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
15 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain  
20 alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso,  
25 phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8  
30 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
5 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
10 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
15 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl,  
20 C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is  
25 optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

30 U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain or

alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and

5 when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,

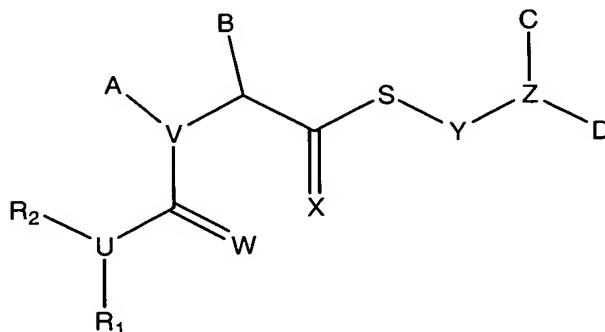
10 wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered

15 ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

25. A method as claimed in Claim 24 in which Ar is

20 selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

25 26. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula XIX:



## (XIX)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

5 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
10 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or  
15 SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
20 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
25 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or  
30 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is



optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 5 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> 10 straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, 15 and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, 20 amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally 25 replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>; and

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more 30 additional heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>3</sub>;

X is either O or S;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group  
5 consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-  
10 ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and  
15 heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a  
20 corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
25 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
30 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is

optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or

5 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or

10 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

15 W is O or S; and  
U is either O or N, provided that:  
when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain

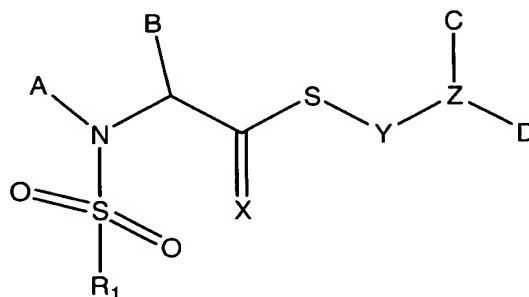
20 alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and

25 when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is

30 substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group

consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

27. A method as claimed in Claim 1 in which the  
5 sensorineurotrophic compound is a compound of formula XX:



(XX)

a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

- 10 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group  
15 consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

- Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
20 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
25 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
10 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
15 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
20 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
25 a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
30 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl,

C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or  
5 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and  
10 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group  
15 consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said  
20 alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

25 28. A method as claimed in claim 27 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.  
30

29. A method as claimed in Claim 28 in which A and B, together with the nitrogen and carbon atoms to which they are respectfully attached, form a 6 membered saturated or

unsaturated heterocyclic ring; and R<sub>2</sub> is C<sub>4</sub>-C<sub>7</sub> branched chain alkyl, C<sub>4</sub>-C<sub>7</sub> cycloalkyl, phenyl, or 3,4,5-trimethoxyphenyl.

- 5 30. A method as claimed in Claim 27 in which the sensorineurotrophic compound is selected from the group consisting of:

3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-(benzenesulfonyl)pyrrolidine-2-carboxylate;

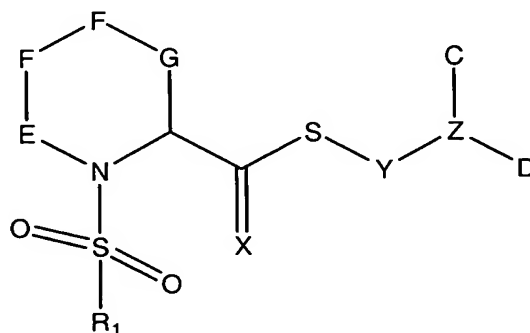
10 3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;

3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;

15 1,5-Diphenyl-3-pentylmercaptyl-N-(*para*-toluenesulfonyl)pipecolate; and

pharmaceutically acceptable salts and solvates thereof.

31. A method as claimed in Claim 27 in which the  
20 sensorineurotrophic compound is a compound of formula XXI:



(XXI)

- or a pharmaceutically acceptable salt, ester, or solvate  
25 thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
5 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
10 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>  
15 straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

20 Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
25 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

30 Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6



heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

5           C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
10 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy,  
15 C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein  
20 any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

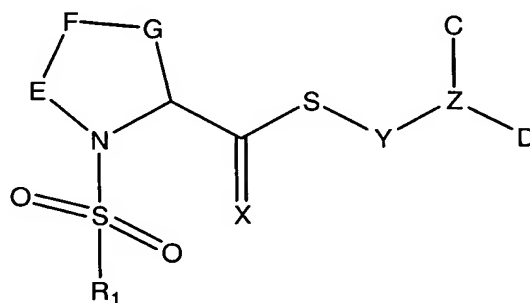
          R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said  
25 alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
30 alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said

alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

32. A method as claimed in Claim 31 in which Ar is  
 5 selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

10

33. A method as claimed in Claim 27 in which the sensorineurotrophic agent is a compound of formula XXII:



(XXII)

15 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

20 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-  
 25 ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom

of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>

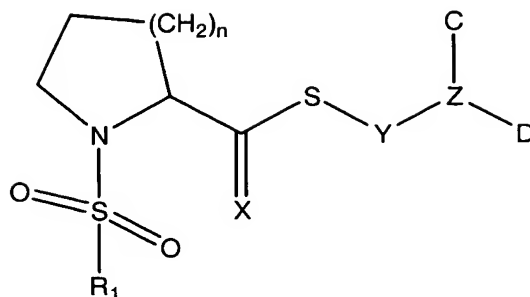
cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of  
5 said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub>  
10 cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-  
15 C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl,  
20 sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

34. A method as claimed in Claim 33 in which Ar is  
25 selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

30

35. A method as claimed in Claim 27 in which the sensorineurotrophic compound is a compound of formula XXIII:



(XXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5        n is 1, 2 or 3;

      X is either O or S;

      Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
 10 optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 15 or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

      Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
 20 optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 25 or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
10 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
15 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl,  
25 C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

30 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group

consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

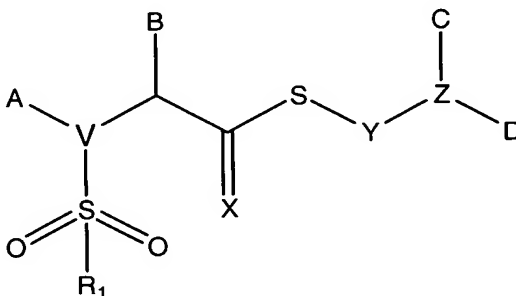
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36. A method as claimed in Claim 35 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

15

37. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula

20 XXIV:



(XXIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25

V is CH, N, or S;

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring

containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

5 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, 10 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or 15 SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the 20 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring 25 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or 30 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is



optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 5 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or 10 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or 15 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or 20 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

25 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group 30 consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino,

5

R1-C(=O)-C(=X)-N1CCCC1C(=O)Y(Z)n

(XXV)

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

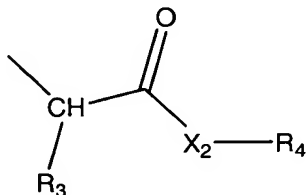
Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z,  
5 hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more  
substituent(s) independently selected from the group  
10 consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



15 wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
20 alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub>  
25 straight or branched chain alkenyl substituted with phenyl;

n is 1 or 2, and;

t is 1, 2 or 3.

39. A method as claimed in Claim 38 in which the compound is selected from the group consisting of:

3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

5 3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

3-(3,4,5-trimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

10 3-(3,4,5-trimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

3-(4,5-dichlorophenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

3-(4,5-dichlorophenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

15 3-(4,5-methylenedioxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

3-(4,5-methylenedioxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

20 3-cyclohexyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

3-cyclohexyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

25 (1*R*)-1,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

(1*R*)-1,3-diphenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

(1*R*)-1-cyclohexyl-3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

30 (1*R*)-1-cyclohexyl-3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

(1R)-1-(4,5-dichlorophenyl)-3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;

5 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-cyclohexyl)ethyl-2-pyrrolidinecarboxylate;

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-4-cyclohexyl)butyl-2-pyrrolidinecarboxylate;

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate;

10 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])ethyl-2-pyrrolidinecarboxylate;

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate;

15 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-phenyl)ethyl-2-pyrrolidinecarboxylate;

1,7-diphenyl-4-heptyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxo-4-hydroxybutyl)-2-pyrrolidinecarboxylate;

20 3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxamide;

1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine ethyl ester;

25 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-leucine ethyl ester;

1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylglycine ethyl ester;

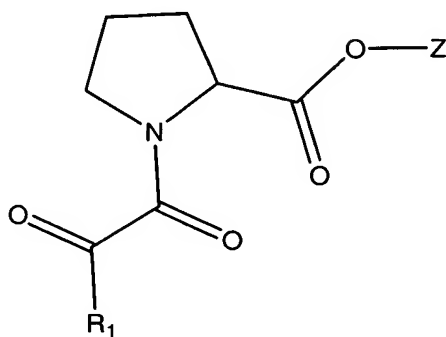
1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine phenyl ester;

30 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine benzyl ester;

1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-isoleucine ethyl ester; and

pharmaceutically acceptable salts, esters, and solvates thereof.

40. A method as claimed in Claim 38 in which the  
5 sensorineurotrophic compound is a compound of formula XXVI:



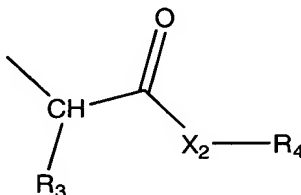
(XXVI)

10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents  
15 independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more  
20 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

Z is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



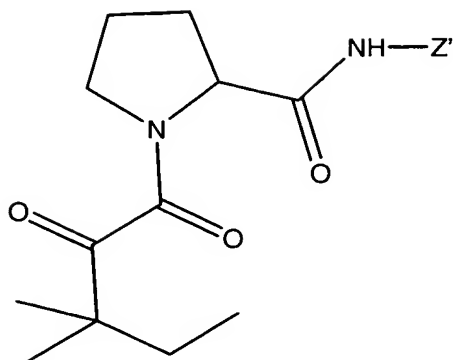
wherein:

10        R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

      X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
15 alkenyl; and

      R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub>  
20 straight or branched chain alkenyl substituted with phenyl.

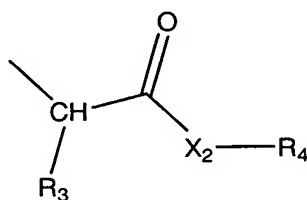
41. A method as claimed in Claim 1 in which the sensorineurotrophic agent may be a compound of formula  
25 XXVII:



(XXVII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5        Z' is the fragment



wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or unsubstituted Ar<sub>1</sub>, wherein said alkyl is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

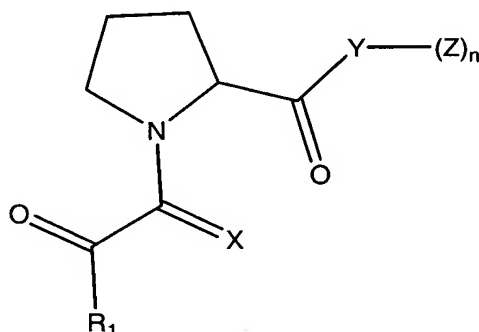
R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently



selected from the group consisting of hydrogen, halo,  
hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy,  
5 benzyloxy, and amino.

42. A method as claimed in Claim 38 in which the  
sensorineurotrophic agent may also be a compound of  
formula XXVIII:



(XXVIII)

wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
straight or branched chain alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl or  
15 Ar<sub>1</sub>, wherein said alkyl or alkenyl is unsubstituted or  
substituted with C<sub>3</sub>-C<sub>6</sub> cycloalkyl or Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the  
group consisting of 2-furyl, 2-thienyl, and phenyl;

X is selected from the group consisting of oxygen  
20 and sulfur;

Y is oxygen or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a  
Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl;

each Z, independently, is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight  
or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched  
25 chain alkenyl, wherein said Z is substituted with one or  
more substituent(s) independently selected from the group  
consisting of 2-furyl, 2-thienyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl,  
pyridyl, and phenyl, each having one or more

substituent(s) independently selected from the group consisting of hydrogen and C<sub>1</sub>-C<sub>4</sub> alkoxy; and n is 1 or 2.

- 5 43. A method as claimed in Claim 42 in which the compound is selected from the group consisting of:
- 3-(2,5-dimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(2,5-dimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-  
10 (3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 2-(3,4,5-trimethoxyphenyl)-1-ethyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 15 3-(2-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 20 3-phenyl-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidine-carboxylate;
- 25 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 30 3-(3-pyridyl)-1-propyl (2*S*)-N-([2-thienyl]glyoxyl)pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate;

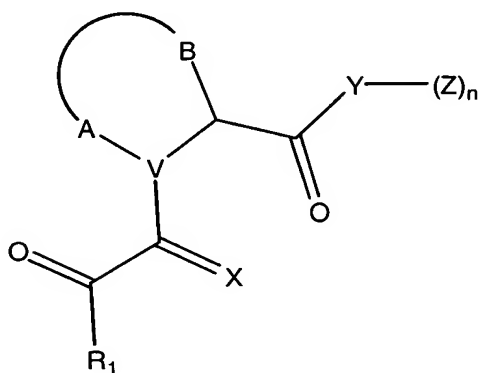
3,3-diphenyl-1-propyl (2*S*)-1-cyclohexylglyoxyl-  
2-pyrrolidinecarboxylate;

3,3-diphenyl-1-propyl (2*S*)-1-(2-thienyl)glyoxyl-2-  
pyrrolidinecarboxylate; and

5        pharmaceutically acceptable salts, esters, and  
solvates thereof.

44. A method as claimed in Claim 1 in which the  
sensorineurotrophic compound is a compound of formula

10    XXIX:



(XXIX)

or a pharmaceutically acceptable salt, ester, or solvate  
thereof, wherein:

15        V is CH, N, or S;

A and B, together with V and the carbon atom to  
which they are respectively attached, form a 5-7 membered  
saturated or unsaturated heterocyclic ring containing, in  
addition to V, one or more heteroatom(s) independently  
20        selected from the group consisting of O, S, SO, SO<sub>2</sub>, N,  
NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl,  
C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub>  
cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is  
25        either unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl,

carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

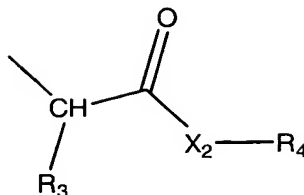
R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



wherein:

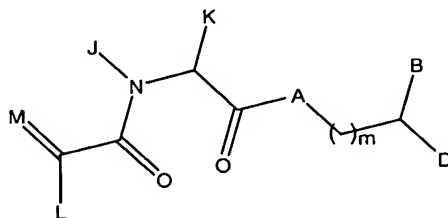
R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

5 X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

R<sub>4</sub> is selected from the group consisting of phenyl,  
10 benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and,  
15 n is 1 or 2.

45. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula (LV):

20



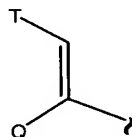
(LV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25 m is 0-3;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



15

wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

20 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

25 Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in

30 either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein Ar contains 1-3

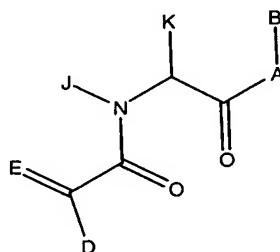
substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
5 (C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;

L is either hydrogen or U; M is either oxygen or CH-U, provided that if L is hydrogen, then M is CH-U, or if  
10 M is oxygen then L is U;

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
15 cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or  
20 cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

46. A method as claimed in Claim 1 in which the  
25 sensorineurotrophic compound is a compound of formula (LVI):

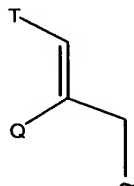


(LVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A is O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

5 B is hydrogen, CHL-Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, Ar substituted C<sub>1</sub>-C<sub>6</sub> alkyl or C<sub>2</sub>-C<sub>6</sub> alkenyl, or



10

wherein L and Q are independently hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and  
15 T is Ar or C<sub>5</sub>-C<sub>7</sub> cyclohexyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
20

Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl having 1-3 substituent(s) independently selected from the group  
25 consisting of hydrogen, halo, hydroxy, nitro, CF<sub>3</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, and phenyl.

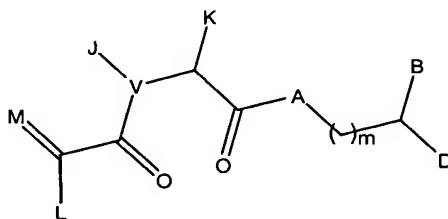


D is hydrogen or U; E is oxygen or CH-U, provided that if D is hydrogen, then E is CH-U, or if E is oxygen, then D is U;

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub>-cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, 2-indolyl, 3-indolyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

47. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula LVIII:



(LVIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring

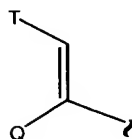
containing, in addition to V, one or more heteroatom(s) selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or

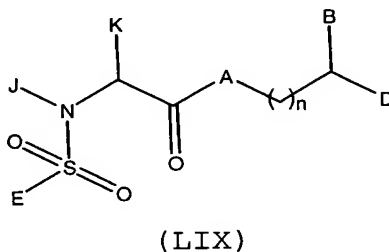


- 5        wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
          branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
          branched chain alkenyl; and  
          T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
          positions 3 and 4 with substituents  
 10        independently selected from the group  
          consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
          alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
          Ar is selected from the group consisting of 1-  
          naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
 15        thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl,  
          monocyclic and bicyclic heterocyclic ring systems with  
          individual ring sizes being 5 or 6 which contain in  
          either or both rings a total of 1-4 heteroatom(s)  
          independently selected from the group consisting of  
 20        oxygen, nitrogen and sulfur; wherein Ar contains 1-3  
          substituent(s) independently selected from the group  
          consisting of hydrogen, halo, hydroxy, hydroxymethyl,  
          nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched  
          chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
 25        (C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub>  
          straight or branched chain alkenyl), O-benzyl, O-phenyl,  
          amino, 1,2-methylenedioxy, carbonyl, and phenyl;  
          L is either hydrogen or U; M is either oxygen or CH-  
          U, provided that if L is hydrogen, then M is CH-U, or if  
 30        M is oxygen then L is U;  
          U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain  
          alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-

C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

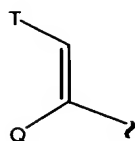
48. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of the formula (LIX):



or a pharmaceutically acceptable salt, ester or solvate thereof, wherein:

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
 5 branched chain alkenyl; and  
 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
 positions 3 and 4 with one or more  
 substituent(s) independently selected from the  
 group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
 10 alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
 provided that both B and D are not hydrogen;

Ar is selected from the group consisting of phenyl,  
 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
 thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and  
 15 bicyclic heterocyclic ring systems with individual ring  
 sizes being 5 or 6 which contain in either or both rings  
 a total of 1-4 heteroatoms independently selected from  
 the group consisting of O, N, and S; wherein Ar contains  
 1-3 substituent(s) independently selected from the group  
 20 consisting of hydrogen, halo, hydroxy, nitro,  
 trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
 branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
 alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-  
 (C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-  
 25 phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
 straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-  
 C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or  
 branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain  
 30 alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

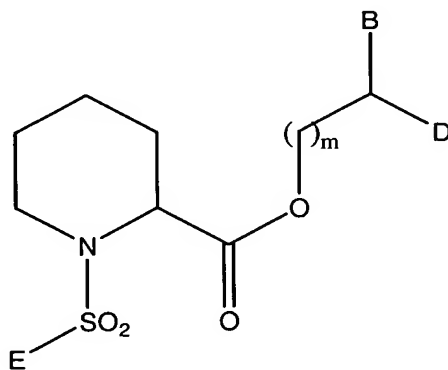
J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub>  
 straight or branched chain alkyl, benzyl, or

cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with O, S, SO, or SO<sub>2</sub>;

n is 0 to 3.

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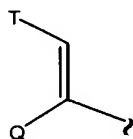
49. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of Formula LXI:



(LXI)

or a pharmaceutically acceptable salt, ester or solvate thereof, wherein:

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

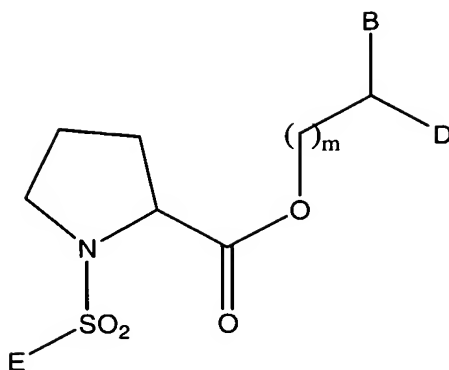
5 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl; provided that both B and D are not hydrogen;

10 Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings  
15 a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
20 branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
25 straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar; and  
m is 0 to 3.

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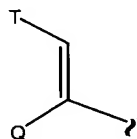
50. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of Formula (LXII):



(LXII)

or a pharmaceutically acceptable salt thereof, wherein:

B and D are independently Ar, hydrogen,  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl, or  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with  $\text{C}_5\text{-C}_7$  cycloalkyl,  $\text{C}_5\text{-C}_7$  cycloalkenyl, or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of O, S, SO, and  $\text{SO}_2$  in chemically reasonable substitution patterns, or



15

wherein Q is hydrogen,  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl, or  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl; and

T is Ar or  $\text{C}_5\text{-C}_7$  cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy,  $\text{O-(C}_1\text{-C}_4\text{ alkyl)}$ ,  $\text{O-(C}_2\text{-C}_4\text{ alkenyl)}$ , and carbonyl;

provided that both B and D are not hydrogen;

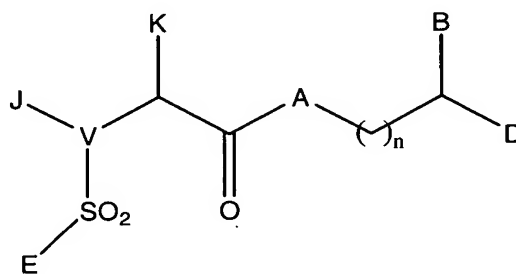


Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar; and

m is 0 to 3.

51. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of Formula LXIII:



(LXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

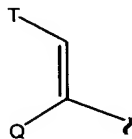
R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group

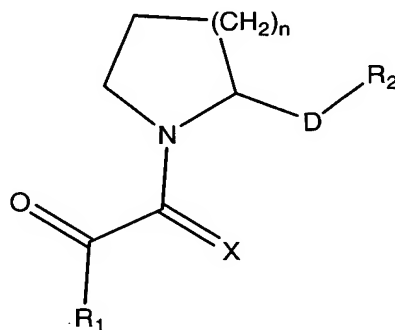
consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



- 5        wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
         branched chain alkenyl; and  
         T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
         positions 3 and 4 with one or more  
10        substituent(s) independently selected from the  
         group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
         alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
provided that both B and D are not hydrogen;  
         Ar is selected from the group consisting of phenyl,  
15        1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
         thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and  
         bicyclic heterocyclic ring systems with individual ring  
         sizes being 5 or 6 which contain in either or both rings  
         a total of 1-4 heteroatoms independently selected from  
20        the group consisting of O, N, and S; wherein Ar contains  
         1-3 substituent(s) independently selected from the group  
         consisting of hydrogen, halo, hydroxy, nitro,  
         trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
25        alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-  
         (C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-  
         phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;  
         E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
         straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-  
30        C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or  
         branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain  
         alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl, or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with  
5 O, S, SO, or SO<sub>2</sub>;  
n is 0 to 3.

52. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula  
10 (LXIV):



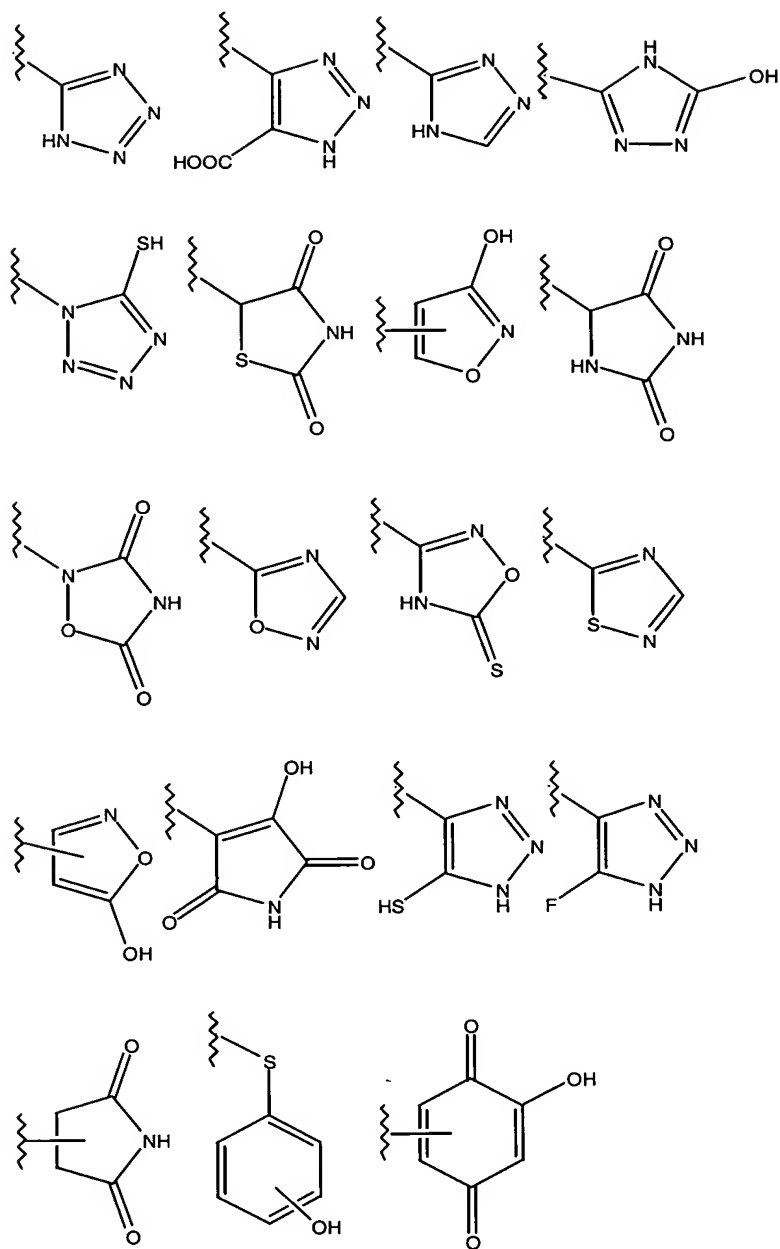
(LXIV)

in which:

- n is 1-3;  
15 X is either O or S;  
 $R_1$  is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;  
20 D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl; and  
 $R_2$  is a carboxylic acid or a carboxylic acid isostere; or a pharmaceutically acceptable salt, ester, or solvate thereof.

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53. A method as claimed in Claim 52 in which  
 $R_2$  is selected from the group:

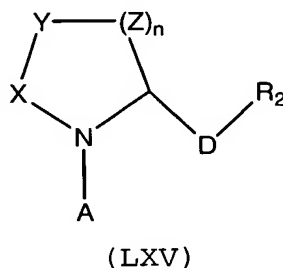


- COOH, -SO<sub>3</sub>H, -SO<sub>2</sub>HNR<sup>3</sup>, -PO<sub>2</sub>(R<sup>3</sup>)<sub>2</sub>, -CN, -PO<sub>3</sub>(R<sup>3</sup>)<sub>2</sub>, -OR<sup>3</sup>, -  
 SR<sup>3</sup>, -NHCOR<sup>3</sup>, -N(R<sup>3</sup>)<sub>2</sub>, -CON(R<sup>3</sup>)<sub>2</sub>, -CONH(O)R<sup>3</sup>, -CONHNHSO<sub>2</sub>R<sup>3</sup>,  
 5 -COHNSO<sub>2</sub>R<sup>3</sup>, and -CONR<sup>3</sup>CN wherein R<sup>3</sup> is hydrogen, hydroxy,  
 halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-  
 alkenoxy, C<sub>1</sub>-C<sub>6</sub>-alkylaryloxy, aryloxy, aryl- C<sub>1</sub>-C<sub>6</sub>-  
 alkyloxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-  
 C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio- C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-

alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or  
alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and  
CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched  
5 chain alkyl or alkenyl.

54. A method as claimed in Claim 1 in which the  
sensorineurotrophic compound is a compound of formula  
(LXV):

10

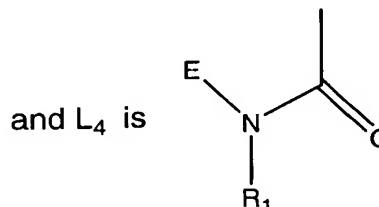
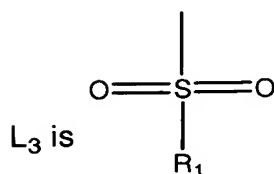
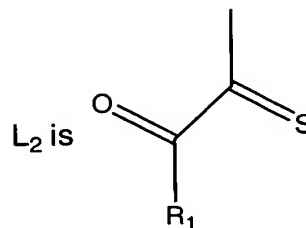
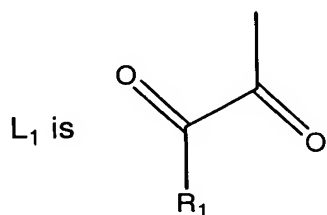


in which

X, Y, and Z are independently selected from the  
15 group consisting of C, O, S, or N, provided that X, Y,  
and Z are not all C;

n is 1-3;

A is selected from the group consisting of L<sub>1</sub>, L<sub>2</sub>,  
L<sub>3</sub>, or L<sub>4</sub>, in which



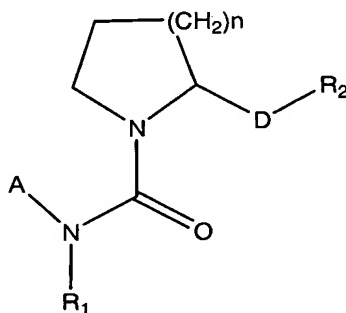
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and  $R_1$  and E, independently, are selected from the group consisting of hydrogen,  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;

$R_2$  is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents selected from  $R^3$ , where

$R^3$  is hydrogen, hydroxy, halo, halo( $C_1$ - $C_6$ )-alkyl, thiocarbonyl, ( $C_1$ - $C_6$ )-alkoxy, ( $C_2$ - $C_6$ )-alkenoxy, ( $C_1$ - $C_6$ )-alkylaryloxy, aryloxy, aryl-( $C_1$ - $C_6$ )-alkyloxy, cyano, nitro, imino, ( $C_1$ - $C_6$ )-alkylamino, amino-( $C_1$ - $C_6$ )-alkyl, sulfhydryl, thio-( $C_1$ - $C_6$ )-alkyl, ( $C_1$ - $C_6$ )-alkylthio, sulfonyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or  $CO_2R^4$  where  $R^4$  is hydrogen or  $C_1$ - $C_9$  straight or branched chain alkyl or alkenyl; or a pharmaceutically acceptable salt, ester, or solvate thereof.

55. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula (LXVI):



(LXVI)

in which:

n is 1-3;

R<sub>1</sub> and A are independently selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;

D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl;

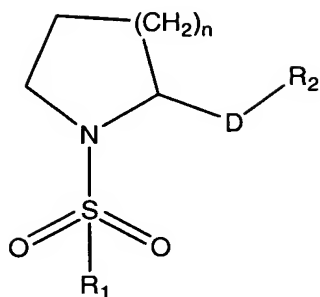
R<sub>2</sub> is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents selected from R<sup>3</sup>, where

R<sup>3</sup> is hydrogen, hydroxy, halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, (C<sub>1</sub>-C<sub>6</sub>)-alkylaryloxy, aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl;

or a pharmaceutically acceptable salt, ester, or solvate thereof.

56. A method as claimed in Claim 1 in which the sensorineurotrophic compound is a compound of formula (LXVII):





(LXVII)

in which:

n is 1-3;

5  $\text{R}_1$  is selected from the group consisting of hydrogen,  $\text{C}_1$ - $\text{C}_9$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_9$  straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;

D is a bond, or a  $\text{C}_1$ - $\text{C}_{10}$  straight or branched chain  
10 alkyl,  $\text{C}_2$ - $\text{C}_{10}$  alkenyl or  $\text{C}_2$ - $\text{C}_{10}$  alkynyl;

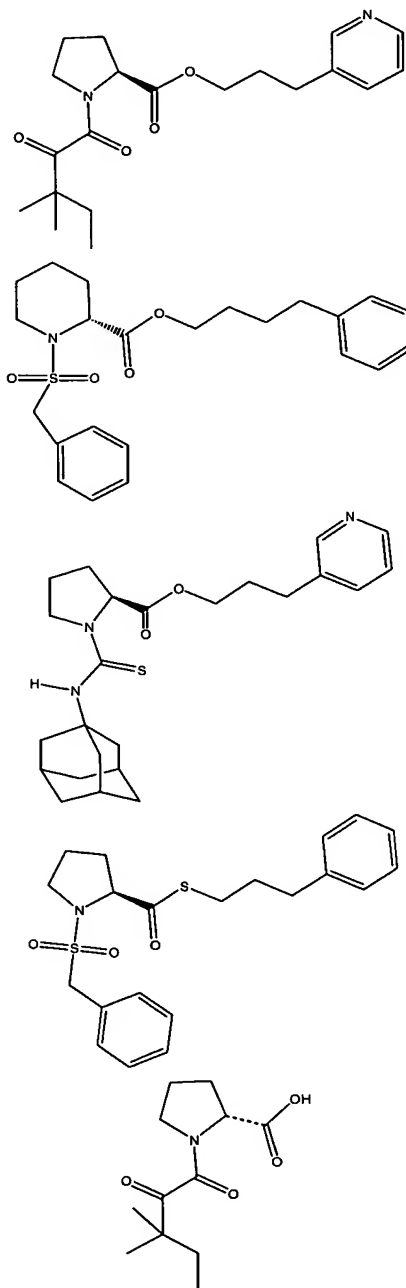
$\text{R}_2$  is a carboxylic acid or a carboxylic acid isostere;

wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is  
15 optionally substituted with one or more substituents selected from  $\text{R}^3$ , where

$\text{R}^3$  is hydrogen, hydroxy, halo, , halo- $(\text{C}_1$ - $\text{C}_6)$ -alkoxy, thiocarbonyl,  $(\text{C}_1$ - $\text{C}_6)$ -alkoxy,  $(\text{C}_2$ - $\text{C}_6)$ -alkenyloxy,  $(\text{C}_1$ - $\text{C}_6)$ -alkylaryloxy, aryloxy, aryl- $(\text{C}_1$ - $\text{C}_6)$ -alkyloxy, cyano,  
20 nitro, imino,  $(\text{C}_1$ - $\text{C}_6)$ -alkylamino, amino- $(\text{C}_1$ - $\text{C}_6)$ -alkyl, sulfhydryl, thio- $(\text{C}_1$ - $\text{C}_6)$ alkyl,  $(\text{C}_1$ - $\text{C}_6)$ -alkylthio, sulfonyl,  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or  $\text{CO}_2\text{R}^4$  where  $\text{R}^4$  is  
25 hydrogen or  $\text{C}_1$ - $\text{C}_9$  straight or branched chain alkyl or alkenyl;  
or a pharmaceutically acceptable salt, ester or solvate thereof.

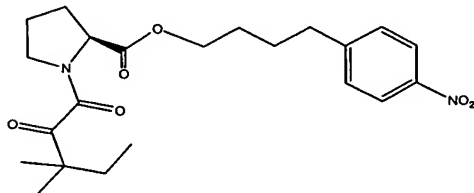
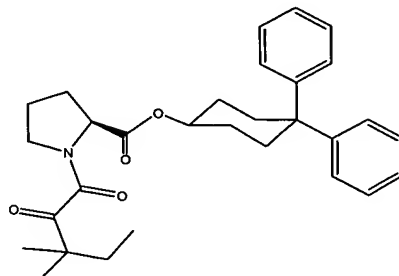
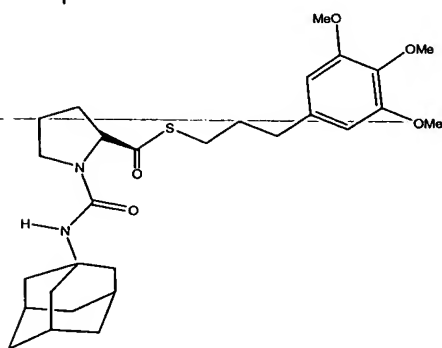
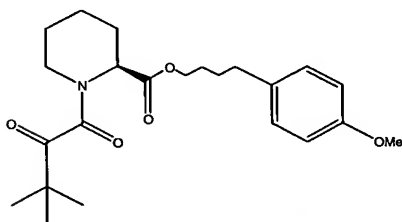
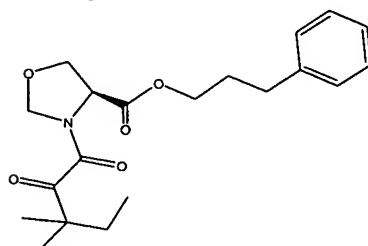
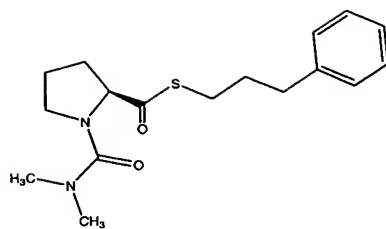
57. A method for treating or preventing hearing loss which comprises administering to a warm-blooded animal a compound selected from the group comprising:

5



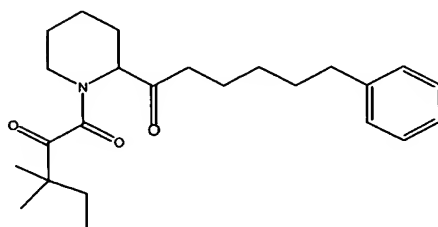
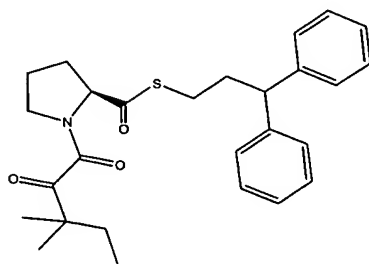
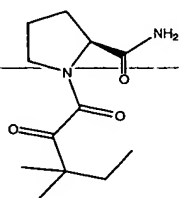
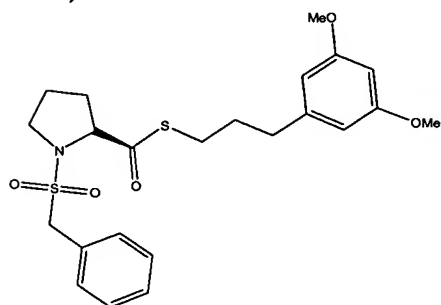
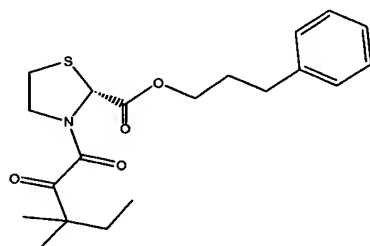
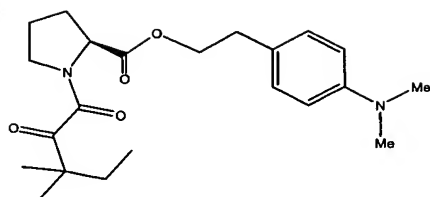
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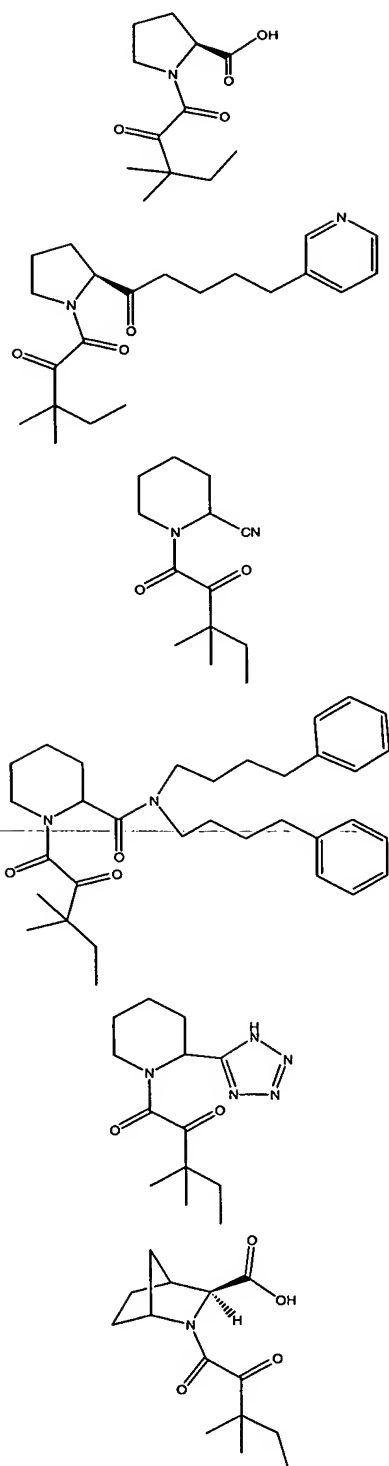
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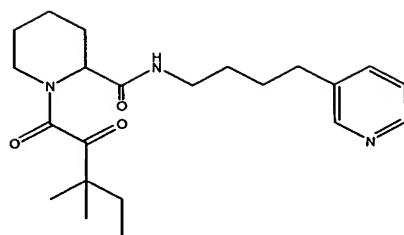
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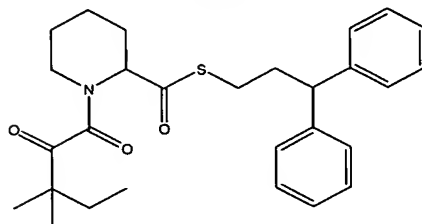
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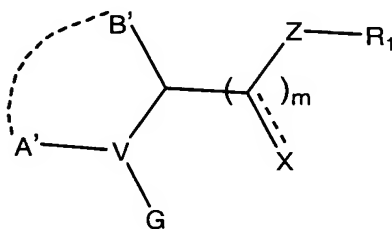


and



or a pharmaceutically acceptable salt, ester or solvate thereof.

- 5 58. A method for the prevention or treatment of injury or degeneration of inner ear sensory cells which comprises administering to a warm-blooded animal a sensorineurotrophic compound of the formula (I'):



(I')

wherein

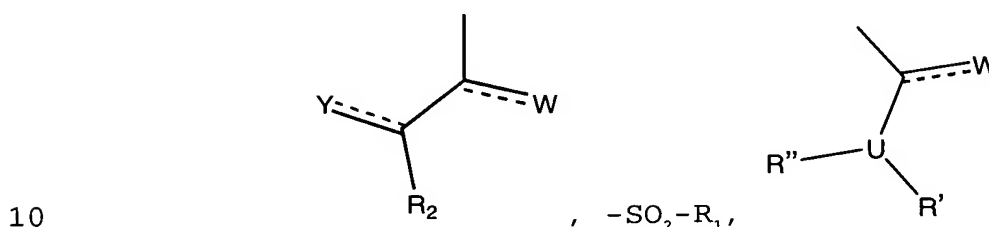
15 A' is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl;

B' is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or,

A' and B', taken together with the atoms to which they are attached, form a 5-7 membered saturated, unsaturated or aromatic heterocyclic or carbocyclic ring which contains one or more additional O, C(R<sub>1</sub>)<sub>2</sub>, S(O)<sub>p</sub>, N, NR<sub>1</sub>, or NR<sub>s</sub> atoms;

V is CH, S, or N;

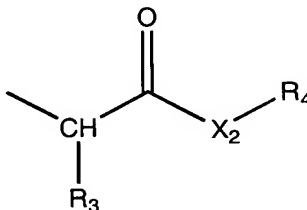
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each R<sub>1</sub>, independently, is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>5</sub>-C<sub>6</sub> cycloalkenyl, a carboxylic acid or carboxylic acid isostere, N(R<sub>4</sub>)<sub>n</sub>, Ar<sub>1</sub>, Ar<sub>4</sub> or K-L wherein said alkyl, cycloalkyl, cycloalkenyl, alkynyl, alkenyl, Ar<sub>1</sub> or Ar<sub>4</sub> is optionally substituted with one or more substituent(s) independently selected from the group consisting of:

2-furyl, 2-thienyl, pyridyl, phenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl wherein said furyl, thienyl, pyridyl, phenyl or cycloalkyl group optionally is substituted with C<sub>1</sub>-C<sub>4</sub> alkoxy, (Ar<sub>1</sub>)<sub>n</sub>, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub> thioester, cyano, imino, COOR<sub>6</sub> in which R<sub>6</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or alkenyl, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, C<sub>1</sub>-C<sub>6</sub> alkylaryloxy C<sub>1</sub>-C<sub>6</sub> aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio,

5       sulfhydryl, sulfonyl, amino, (C<sub>1</sub>-C<sub>6</sub>)-mono- or  
di-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl,  
aminocarboxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched  
chain alkenyl optionally substituted with  
10       (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched  
chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>, and, wherein any  
carbon atom of an alkyl or alkenyl group may  
optionally replaced with O, NR<sub>5</sub>, or S(O)<sub>p</sub>; or,  
R<sub>1</sub> is a moiety of the formula:



15       wherein:  
R<sub>3</sub> is C<sub>1</sub>-C<sub>8</sub> straight or branched chain alkyl which  
is optionally substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl  
or Ar<sub>1</sub>;  
20       X<sub>2</sub> is O or NR<sub>6</sub>, wherein R<sub>6</sub> is selected from the  
group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl;  
25       R<sub>4</sub> is selected from the group consisting of  
phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain  
alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl,  
C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl  
substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or  
30       branched chain alkenyl substituted with phenyl;



$R_2$  is  $C_1-C_9$  straight or branched chain alkyl,  $C_2-C_9$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl or  $Ar_1$ , wherein said alkyl, alkenyl, cycloalkyl, or  
5 cycloalkenyl is optionally substituted with one or more substituents selected from the group consisting of  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,  $(Ar_1)_n$  and  
10 hydroxy; or,

$R_2$  is either hydrogen or P; Y is either oxygen or CH-P, provided that if  $R_2$  is hydrogen, then Y is CH-P, or if Y is oxygen then  $R_2$  is P;

15

P is hydrogen, O- ( $C_1-C_4$  straight or branched chain alkyl), O- ( $C_2-C_4$  straight or branched chain alkenyl),  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain  
20 alkenyl,  $C_5-C_7$  cycloalkyl,  $C_5-C_7$  cycloalkenyl substituted with  $C_1-C_4$  straight or branched chain alkyl or  $C_2-C_4$  straight or branched chain alkenyl,  $(C_1-C_4$  alkyl or  $C_2-C_4$  alkenyl)- $Ar_5$ , or  
25  $Ar_5$

25

$Ar_1$  or  $Ar_2$ , independently, is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is optionally substituted with one or more  
30 substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl,  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,  
35  $C_1-C_4$  alkoxy,  $C_2-C_4$  alkenyloxy, phenoxy,

benzyloxy, and amino; wherein the individual ring contains 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S, and, wherein any aromatic or tertiary alkylamine is optionally oxidized to a corresponding N-oxide;

m is 0 or 1

10

n is 1 or 2;

p is 0, 1, or 2;

15

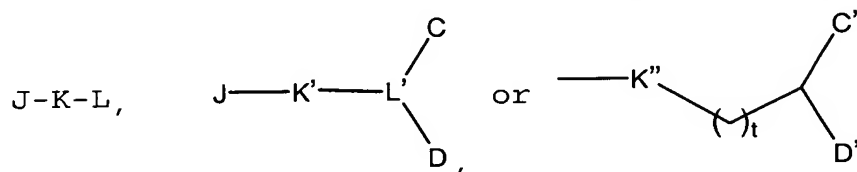
t is 0, 1, 2, 3, or 4;

X is O, CH<sub>2</sub> or S;

W and Y, independently, are O, S, CH<sub>2</sub> or H<sub>2</sub>;

20

Z is C(R<sub>1</sub>)<sub>2</sub>, O, S, a direct bond or NR<sub>1</sub>; or, Z-R<sub>1</sub> is



wherein:

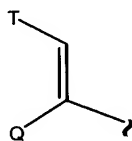
25

C and D are, independently, hydrogen, Ar<sub>4</sub>, Ar<sub>1</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, Ar<sub>1</sub> and Ar<sub>4</sub>; wherein said

30

alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, haloalkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub> ester, C<sub>1</sub>-C<sub>6</sub> thioester, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub> alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>, or (SO)<sub>p</sub>;

C' and D' are independently hydrogen, Ar<sub>5</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>5</sub>, wherein, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

T is Ar<sub>5</sub> or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl

5 J is O, NR<sub>1</sub>, S, or (CR<sub>1</sub>)<sub>2</sub>;

K is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar<sub>3</sub>; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub>, is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen;

10

15

20

wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub>, is optionally replaced with O, NR''', or S(O)<sub>p</sub>;

K' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, haloalkyl, thiocarbonyl, ester, thioester, alkoxy, alkenoxy, cyano, nitro, imino, alkylamino, aminoalkyl, sulfhydryl, thioalkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>, S(O)<sub>p</sub>;

25

30

35

$K''$  is  $C(R_1)_2$ , O, S, a direct bond or  $NR_1$ ,

5  $R'''$  is selected from the group consisting of  
hydrogen,  $C_1-C_4$  straight or branched chain  
alkyl,  $C_3-C_4$  straight or branched chain alkenyl  
or alkynyl, and  $C_1-C_4$  bridging alkyl wherein a  
bridge is formed between the nitrogen and a  
carbon atom of said alkyl or alkenyl chain  
10 containing said heteroatom to form a ring,  
wherein said ring is optionally fused to an  $Ar_3$   
group;

15 L is an aromatic amine or a tertiary amine  
oxidized to a corresponding N-oxide;  
said aromatic amine being selected from the  
group consisting of pyridyl, pyrimidyl,  
quinolinyl, and isoquinolinyl, said aromatic  
amine being optionally substituted with one or  
20 more substituent(s) independently selected from  
the group consisting of halo, hydroxy, nitro,  
trifluoromethyl,  $C_1-C_6$  straight or branched  
chain alkyl,  $C_2-C_6$  straight or branched chain  
alkenyl,  $C_1-C_4$  alkoxy,  $C_2-C_4$  alkenyloxy, phenoxy,  
25 benzyloxy, and amino; and wherein

said tertiary amine is  $NR_xR_yR_z$ , wherein  $R_x$ ,  
 $R_y$ , and  $R_z$  are independently selected from the  
group consisting of  $C_1-C_6$  straight or branched  
chain alkyl and  $C_2-C_6$  straight or branched chain  
alkenyl; wherein said alkyl or alkenyl is  
30 optionally substituted with one or more  
substituent(s) independently selected from the  
group consisting of  $C_1-C_6$  straight or branched  
chain alkyl,  $C_2-C_6$  straight or branched chain  
alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,  
35 hydroxy, carbonyl oxygen, and  $Ar_3$ ; wherein said

alkyl, alkenyl, cycloalkyl, cycloalkenyl, or  
Ar<sub>3</sub> is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl,  
C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen;  
wherein any carbon atom of said alkyl, alkenyl,  
5 cycloalkyl, cycloalkenyl, or Ar<sub>3</sub> is optionally  
replaced with O, NR', S(O)<sub>p</sub>;

L' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched  
chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched  
10 chain alkenyl, wherein any carbon atom of said  
alkyl or alkenyl is optionally substituted in  
one or more position(s) with amino, halo,  
haloalkyl, thiocarbonyl, ester, thioester,  
alkoxy, alkenoxy, cyano, nitro, imino,  
15 alkylamino, aminoalkyl, sulfhydryl, thioalkyl,  
sulfonyl, or oxygen to form a carbonyl, or  
wherein any carbon atom of said alkyl or  
alkenyl is optionally replaced with O, NR<sub>5</sub>,  
S(O)<sub>p</sub>

20

Ar<sub>3</sub> is selected from the group consisting of  
pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl,  
pyridazyl, quinolinyl, and isoquinolinyl; or,

25 Ar<sub>4</sub> is an alicyclic or aromatic, mono-, bi- or  
tricyclic, carbo- or heterocyclic ring, wherein  
the ring is optionally substituted with one or  
more substituent(s) independently selected from  
the group consisting of alkylamino, amido,  
30 amino, aminoalkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub>  
straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy,  
C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched  
chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
cycloalkenyl, carbonyl, carboxy, cyano, diazo,  
35 ester, formanilido, halo, haloalkyl, hydroxy,

imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thioalkyl, thiocarbonyl, thiocyano, thioester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual alicyclic or aromatic ring contains 5-8 members and wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Ar<sub>5</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein Ar<sub>5</sub> optionally contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;

R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a  
5 bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar<sub>4</sub> or Ar<sub>1</sub> group;

10

U is either O or N, provided that:

when U is O, then R' is a lone pair of electrons and R'' is selected from the group consisting of Ar<sub>4</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>9</sub> straight or  
15 branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub>  
20 cycloalkyl; and

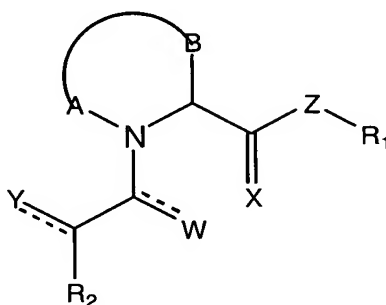
when U is N, then R' and R'' are, independently, selected from the group consisting of hydrogen, Ar<sub>4</sub>, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, a C<sub>7</sub>-C<sub>12</sub> bi- or  
25 tri-cyclic carbocycle, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub>  
30 cycloalkyl; or R' and R'' are taken together to form a heterocyclic 5- or 6-membered ring selected from the group consisting of



pyrrolidine, imidazolidine, pyrazolidine,  
piperidine, and piperazine; or,

a pharmaceutically acceptable salt, ester or solvate  
5 thereof.

59. A method as claimed in Claim 58 in which the  
sensorineurotrophic compound is a compound of formula I:



(I)

or a pharmaceutically acceptable salt, ester, or solvate  
thereof, wherein:

A and B, together with the nitrogen and carbon atoms  
15 to which they are respectively attached, form a 5-7  
membered saturated or unsaturated heterocyclic ring  
containing one or more heteroatom(s) independently  
selected from the group consisting of O, S, SO, SO<sub>2</sub>, N,  
NH, and NR<sub>2</sub>;

20 X is either O or S;

Z is either S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
25 alkenyl, wherein said alkyl or alkenyl is substituted  
with one or more substituent(s) independently selected  
from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain

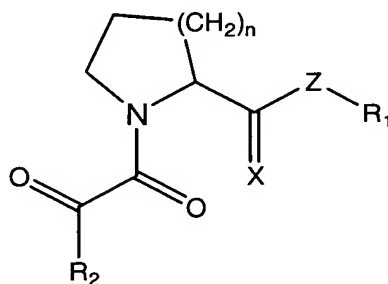
alkenyl substituted with  $(Ar_1)_n$ ,  $C_3-C_8$  cycloalkyl,  $C_1-C_6$  straight or branched chain alkyl or  $C_2-C_6$  straight or branched chain alkenyl substituted with  $C_3-C_8$  cycloalkyl, and  $Ar_2$ ;

5           n is 1 or 2;

$R_2$  is either  $C_1-C_9$  straight or branched chain alkyl,  $C_2-C_9$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl, or  $Ar_1$ , wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either  
10 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of  $C_1-C_4$  straight or branched chain alkyl,  $C_2-C_4$  straight or branched chain alkenyl, and hydroxy; and

$Ar_1$  and  $Ar_2$  are independently an alicyclic or  
15 aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl,  $C_1-C_6$  straight or branched chain  
20 alkyl,  $C_2-C_6$  straight or branched chain alkenyl,  $C_1-C_4$  alkoxy,  $C_2-C_4$  alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N,  
25 and S.

60. A method as claimed in Claim 59 in which the sensorineurotrophic compound is a compound of formula II:



(II)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

n is 1 or 2;

10 X is O or S;

Z is selected from the group consisting of S, CH<sub>2</sub>, CHR<sub>1</sub>, and CR<sub>1</sub>R<sub>3</sub>;

R<sub>1</sub> and R<sub>3</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, and Ar<sub>1</sub>, wherein  
 15 said alkyl, alkenyl or Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, nitro, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, amino, and Ar<sub>1</sub>;

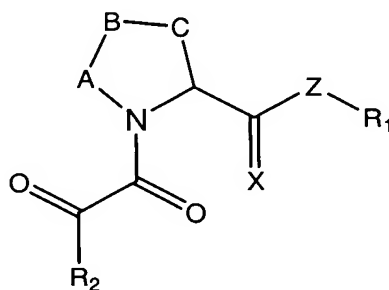
R<sub>2</sub> is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>; and  
 25

Ar<sub>1</sub> is phenyl, benzyl, pyridyl, fluorenyl, thioindolyl or naphthyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group

consisting of halo, trifluoromethyl, hydroxy, nitro, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino.

5

61. A method as claimed in Claim 59 in which the sensorineurotrophic compound is a compound of formula III:



10

(III)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

15 A, B, and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is O or S;

Z is S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

20 R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

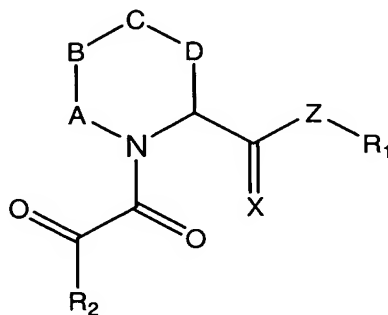
25 n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either

5 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or  
10 aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
15 alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N,  
20 and S.

62. A method as claimed in Claim 59 in which the sensorineurotrophic compound is a compound of formula IV:



(IV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B, C and D are independently  $\text{CH}_2$ , O, S, SO,  $\text{SO}_2$ , NH or  $\text{NR}_2$ ;

5 X is O or S;

Z is S,  $\text{CH}_2$ ,  $\text{CHR}_1$  or  $\text{CR}_1\text{R}_3$ ;

$\text{R}_1$  and  $\text{R}_3$  are independently  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl or  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted  
10 with one or more substituent(s) independently selected from the group consisting of  $(\text{Ar}_1)_n$ ,  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl or  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl substituted with  $(\text{Ar}_1)_n$ ,  $\text{C}_3$ - $\text{C}_8$  cycloalkyl,  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl or  $\text{C}_2$ - $\text{C}_6$  straight or  
15 branched chain alkenyl substituted with  $\text{C}_3$ - $\text{C}_8$  cycloalkyl, and  $\text{Ar}_2$ ;

n is 1 or 2;

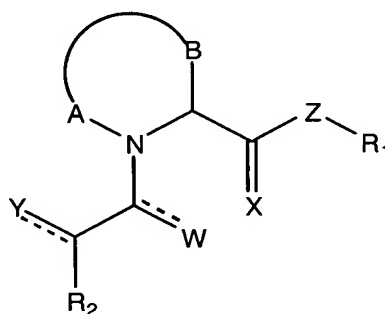
$\text{R}_2$  is either  $\text{C}_1$ - $\text{C}_9$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_9$  straight or branched chain alkenyl,  $\text{C}_3$ - $\text{C}_8$   
20 cycloalkyl,  $\text{C}_5$ - $\text{C}_7$  cycloalkenyl or  $\text{Ar}_1$ , wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of  $\text{C}_3$ - $\text{C}_8$  cycloalkyl,  $\text{C}_1$ - $\text{C}_4$  straight or branched  
25 chain alkyl,  $\text{C}_2$ - $\text{C}_4$  straight or branched chain alkenyl, and hydroxyl; and

$\text{Ar}_1$  and  $\text{Ar}_2$  are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or  
30 substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoro-methyl,  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl,  $\text{C}_1$ - $\text{C}_4$  alkoxy,  $\text{C}_2$ - $\text{C}_4$  alkenyloxy, phenoxy, benzyloxy, and amino;

wherein the individual ring size is 5-8 members; and  
wherein the heterocyclic ring contains 1-6 heteroatom(s)  
independently selected from the group consisting of O, N,  
and S.

5

63. A method as claimed in Claim 58 in which the  
sensorineurotrophic agent may be a compound of formula  
VI:



(VI)

10

or a pharmaceutically acceptable salt, ester, or solvate  
thereof, wherein:

A and B, together with the nitrogen and carbon atoms  
to which they are respectively attached, form a 5-7  
membered saturated or unsaturated heterocyclic ring  
containing, in addition to the nitrogen atom, one or more  
heteroatom(s) independently selected from the group  
consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

20

X is O or S;

Z is O, NH or NR<sub>1</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub>  
straight or branched chain alkenyl, which is substituted  
with one or more substituent(s) independently selected  
from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub>

25

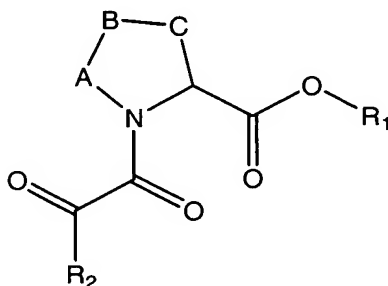
straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

n is 1 or 2;

- 5 R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more
- 10 substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and
- Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic
- 15 ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub>
- 20 alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

25

64. The method of Claim 63 in which the sensorineurotrophic compound is a compound of formula VII:





## (VII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5 A, B and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

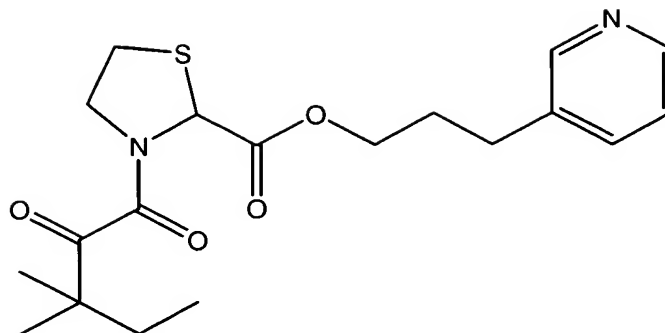
R<sub>1</sub> is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub> and C<sub>1</sub>-C<sub>6</sub> straight or  
10 branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub>  
15 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>; and

Ar<sub>1</sub> is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group  
20 consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic  
25 ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

65. The method of Claim 64 in which the sensorineurotrophic compound is:



66. A method as claimed in Claim 64 in which:

A is CH<sub>2</sub>;

5 B is CH<sub>2</sub> or S;

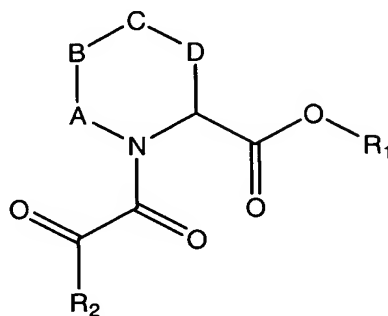
C is CH<sub>2</sub> or NH;

R<sub>1</sub> is selected from the group consisting of 3-phenylpropyl and 3-(3-pyridyl)propyl; and

10 R<sub>2</sub> is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, and *tert*-butyl.

67. A method as claimed in Claim 63 in which the sensorineurotrophic compound is a compound of formula VIII:

15



(VIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

20 A, B, C and D are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub> and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>; and

Ar<sub>1</sub> is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

68. A method of Claim 67 in which:

A is CH<sub>2</sub>;

25 B is CH<sub>2</sub>;

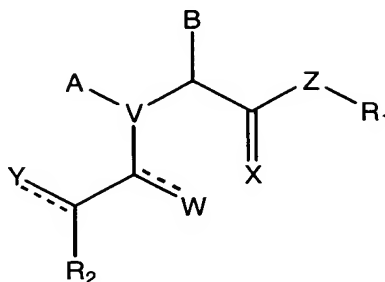
C is S, O or NH;

D is CH<sub>2</sub>;

R<sub>1</sub> is selected from the group consisting of 3-phenylpropyl and (3,4,5-trimethoxy)phenylpropyl; and

30 R<sub>2</sub> is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, *tert*-butyl, phenyl, and 3,4,5-trimethoxyphenyl.

69. A method as claimed in Claim 58 in which the sensorineurotrophic agent may be a compound of formula IX:



(IX)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;

wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

X is O or S;

5 Z is O, NH or NR<sub>1</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected  
10 from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
15 and Ar<sub>2</sub>;

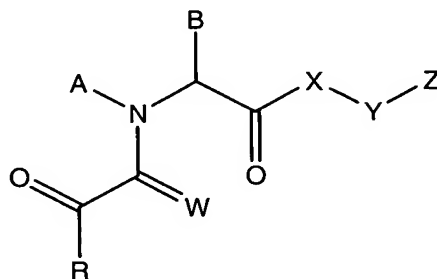
n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said  
20 alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

25 Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl,  
30 nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s)

independently selected from the group consisting of O, N, and S.

70. A method as claimed in Claim 58 in which the  
5 sensorineurotrophic compound is a compound of formula X:



(X)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

- 10 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing one or more heteroatom(s) independently  
selected from the group consisting of CH, CH<sub>2</sub>, O, S, SO,  
15 SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

- R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted  
20 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

- Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-  
25 indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;  
5 wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-  
10 C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
15 cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
20 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized  
25 to a corresponding N-oxide;

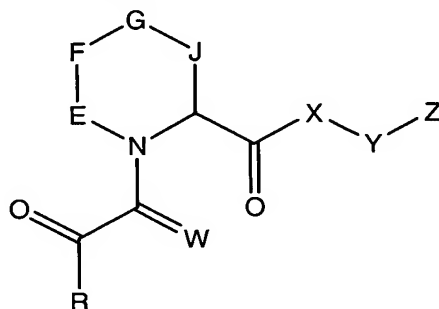
said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently  
30 selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

said tertiary amine is  $\text{NR}_4\text{R}_5\text{R}_6$ , wherein  $\text{R}_4$ ,  $\text{R}_5$ , and  $\text{R}_6$  are independently selected from the group consisting of  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl or  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of  $\text{C}_1\text{-C}_6$  straight or branched chain alkyl,  $\text{C}_2\text{-C}_6$  straight or branched chain alkenyl,  $\text{C}_3\text{-C}_8$  cycloalkyl,  $\text{C}_5\text{-C}_7$  cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with  $\text{C}_1\text{-C}_4$  alkyl,  $\text{C}_2\text{-C}_4$  alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH,  $\text{NR}_1$ , S, SO, or  $\text{SO}_2$ ;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$\text{R}_1$  and  $\text{R}_3$  are independently hydrogen,  $\text{C}_1\text{-C}_4$  straight or branched chain alkyl,  $\text{C}_3\text{-C}_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

71. A method as claimed in Claim 70 in which the sensorineurotrophic compound is a compound of formula XI:



(XI)

25

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:



E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>

straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said  
5 ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

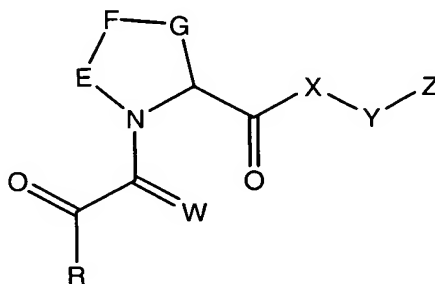
said aromatic amine is pyridyl, pyrimidyl, quinolinyl, and isoquinolinyl, which is either  
10 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
15 phenoxy, benzyloxy, and amino;

said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl  
20 is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

30 Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$R_1$  and  $R_3$  are independently hydrogen,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_3$ - $C_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 72. A method as claimed in Claim 70 in which the sensorineurotrophic compound is a compound of formula XII:



(XII)

- 10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently  $CH_2$ , O, S, SO,  $SO_2$ , NH or  $NR_1$ ;

W is O, S,  $CH_2$ , or  $H_2$ ;

- 15 R is  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, or  $Ar_1$ , which is optionally substituted with one or more substituent(s) independently selected from the group consisting of  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl, hydroxy,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, and  $Ar_1$ ;

$Ar_1$  is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s)

- 25 independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted  
5 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl,  
10 cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

15 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain  
20 containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

said aromatic amine is pyridyl, pyrimidyl,  
25 quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
30 branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

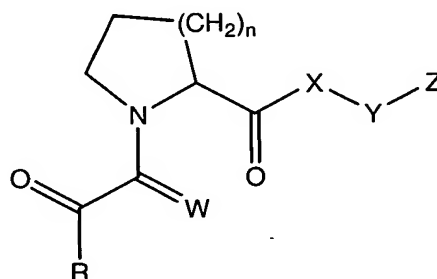
said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight

or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

R<sub>1</sub> and R<sub>3</sub> are independently hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

73. A method as Claimed in Claim 70 in which the sensorineurotrophic compound is a compound of formula XIII:



(XIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

n is 1, 2, or 3, forming a 5-7 member heterocyclic ring;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain

containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

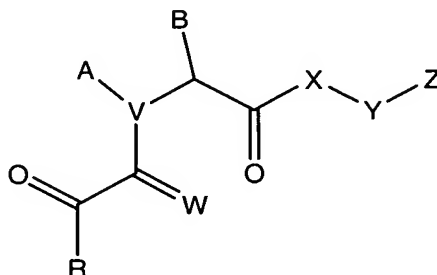
5        said aromatic amine is pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-  
10 C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

      said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of  
15 C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
20 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

      Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

30        R<sub>1</sub> and R<sub>3</sub>, independently, are hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

74. A method as claimed in Claim 58 in which the sensorineurotrophic agent may be a compound of formula XIV:



(XIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>7</sub>;

R<sub>7</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R<sub>7</sub> is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;



wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

5 R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl,  
10 hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or  
15 more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

20 X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected  
25 from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub>  
30 alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

$R_2$  is selected from the group consisting of hydrogen,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_3$ - $C_4$  straight or branched chain alkenyl or alkynyl, and  $C_1$ - $C_4$  bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

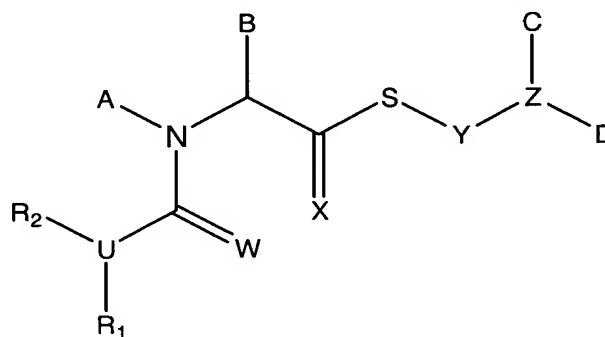
10 said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy,  
15 nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_1$ - $C_4$  alkoxy,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino;

said tertiary amine is  $NR_4R_5R_6$ , wherein  $R_4$ ,  $R_5$ , and  $R_6$  are independently selected from the group consisting of  
20  $C_1$ - $C_6$  straight or branched chain alkyl or  $C_2$ - $C_6$  straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_3$ - $C_8$   
25 cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
30 cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH,  $NR_1$ , S, SO, or  $SO_2$ ;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

R<sub>1</sub> and R<sub>3</sub> are independently hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 75. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XV:



(XV)

10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more additional heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>3</sub>;

X is either O or S;

20 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 25 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
10 is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or  
15 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-  
20 alkyl, thiocarbonyl, thiocycano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group  
25 consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
30 wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

5           C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
10 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy,  
15 C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein  
20 any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

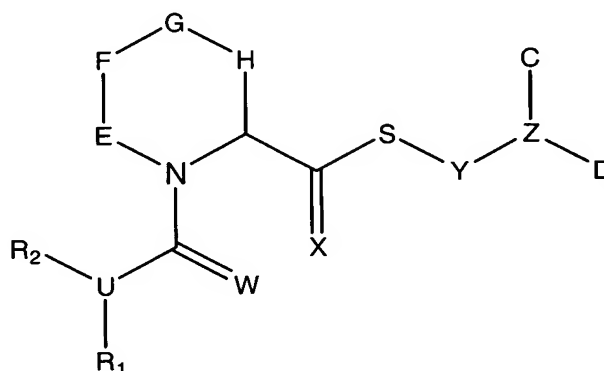
25           when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more  
30           substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and  
            when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub>

straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub>

5 cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

10 76. A method as claimed in Claim 75 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, 15 oxazolyl, thiazolyl, pyrazolyl, and thienyl.

77. A method as claimed in Claim 75 in which the sensorineurotrophic compound is a compound of formula XVI:



(XVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25 E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH, or NR<sub>3</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
5 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
10 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
15 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
20 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain  
25 alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso,  
30 phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8

members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a  
5 corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
10 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
15 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or  
25 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more  
30 position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and



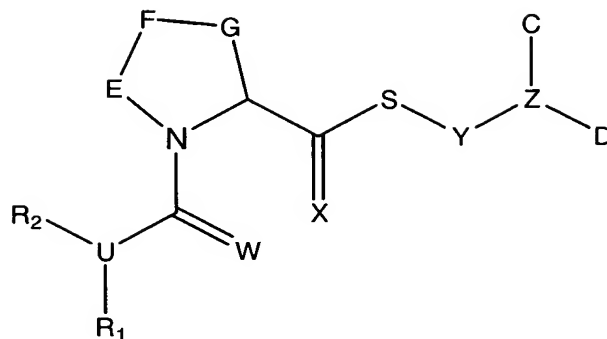
U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and

when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

78. A method as claimed in Claim 77 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

79. A method as claimed in Claim 75 in which the sensorineurotrophic compound is a compound of formula XVII:



(XVII)

or a pharmaceutically acceptable salt, ester, or solvate  
 5 thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>,  
 NH, and NR<sub>3</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
 10 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
 wherein any carbon atom of said alkyl or alkenyl is  
 optionally substituted in one or more position(s) with  
 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano,  
 15 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
 a carbonyl, or wherein any carbon atom of said alkyl or  
 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or  
 SO<sub>2</sub>;

20 R<sub>3</sub> is selected from the group consisting of  
 hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>  
 straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
 bridging alkyl wherein a bridge is formed between the  
 nitrogen and a carbon atom of said alkyl or alkenyl chain  
 25 containing said heteroatom to form a ring, wherein said  
 ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group

5 consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-

10 ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and

15 heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or

20 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is

25 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form

30 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or

branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

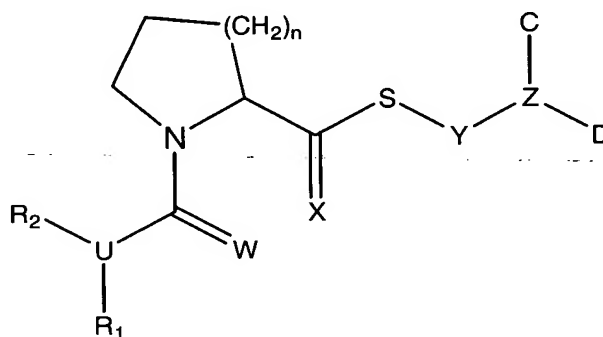
when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken

together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

5

80. A method as claimed in Claim 79 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, 10 imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

81. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XVIII:



15

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

20 n is 1, 2 or 3;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is 25 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

5           R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain  
10 containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

          Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more  
15 substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or  
20 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester,  
25 thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group  
30 consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

          Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,

wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, 5 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

10 C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> 15 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, alkoxy, C<sub>2</sub>-C<sub>6</sub>- 20 alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of 25 said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

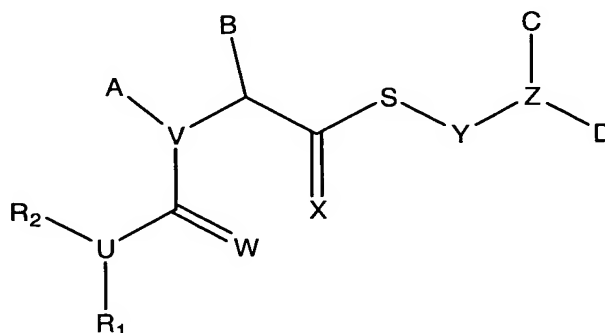
U is either O or N, provided that:

30 when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain or alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more

substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

82. A method as claimed in Claim 81 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

83. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XIX:



(XIX)



or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with

amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
5 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
10 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or  
15 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or  
20 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>; and

25 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more additional heteroatom(s) independently selected from the  
30 group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>3</sub>;

X is either O or S;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more

substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen,

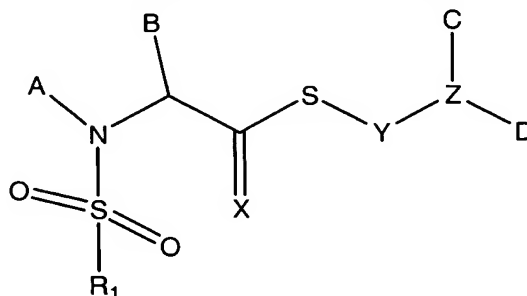
and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

84. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XX:



(XX)

- 5 a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

- Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

- 25 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the

nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
5 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group  
10 consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
15 wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
20 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
25 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or  
30 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or

sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally  
5 replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or  
10 more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-  
15 ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

20

85. A method as claimed in claim 84 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl,  
25 isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

86. A method as claimed in Claim 85 in which A and B, together with the nitrogen and carbon atoms to which they  
30 are respectfully attached, form a 6 membered saturated or unsaturated heterocyclic ring; and R<sub>2</sub> is C<sub>4</sub>-C<sub>7</sub> branched chain alkyl, C<sub>4</sub>-C<sub>7</sub> cycloalkyl, phenyl, or 3,4,5-trimethoxyphenyl.

87. A method as claimed in Claim 84 in which the sensorineurotrophic compound is selected from the group consisting of:

3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-  
5 (benzenesulfonyl)pyrrolidine-2-carboxylate;

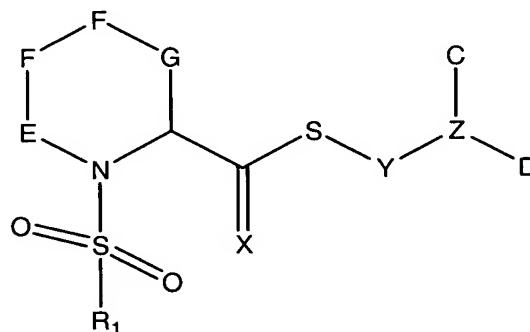
3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;

3-(*para*-Methoxyphenyl)-1-propylmercaptyl(2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;

10 1,5-Diphenyl-3-pentylmercaptyl-N-(*para*-toluenesulfonyl)pipecolate; and

pharmaceutically acceptable salts and solvates thereof.

88. A method as claimed in Claim 84 in which the  
15 sensorineurotrophic compound is a compound of formula XXI:



(XXI)

or a pharmaceutically acceptable salt, ester, or solvate  
20 thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
25 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
wherein any carbon atom of said alkyl or alkenyl is  
optionally substituted in one or more position(s) with



amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
5 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>  
10 straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

15 Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
20 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

25 Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6  
30 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

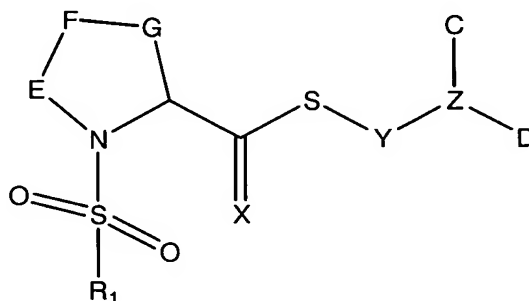
R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

89. A method as claimed in Claim 88 in which Ar is selected from the group consisting of phenyl, benzyl,

naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

5

90. A method as claimed in Claim 84 in which the sensorineurotrophic agent is a compound of formula XXII:



(XXII)

10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

15 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-  
 20 ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O,  
 25 NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>

bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

5       Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6  
10 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

      Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
15 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-  
20 alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

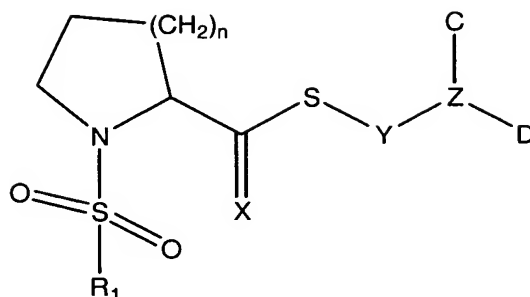
25       C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
30 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or

more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

91. A method as claimed in Claim 90 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

92. A method as claimed in Claim 84 in which the sensorineurotrophic compound is a compound of formula XXIII:



(XXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5        n is 1, 2 or 3;

      X is either O or S;

      Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
 10 optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 15 or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

      Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
 20 wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 25 or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
10 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
15 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl,  
25 C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

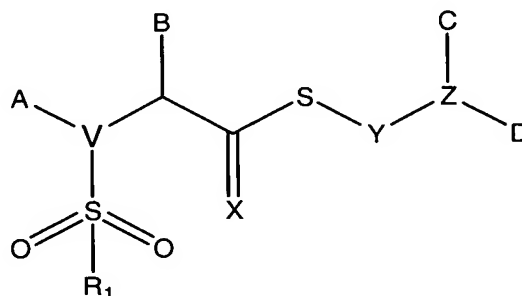
30 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group

consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

10

93. A method as claimed in Claim 92 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

94. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XXIV:



(XXIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25

V is CH, N, or S;

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring



containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

5 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
10 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or  
15 SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
20 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
25 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
30 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is

optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 5 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

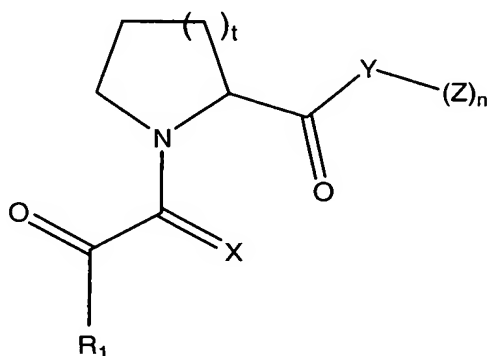
C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or 10 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or 15 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or 20 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

25 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group 30 consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino,

C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>..

5

95. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula XXV:



10

(XXV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

20

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

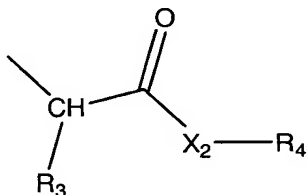
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C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z,  
5 hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group  
10 consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



15 wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
20 alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub>  
25 straight or branched chain alkenyl substituted with phenyl;

n is 1 or 2, and;

t is 1, 2 or 3.

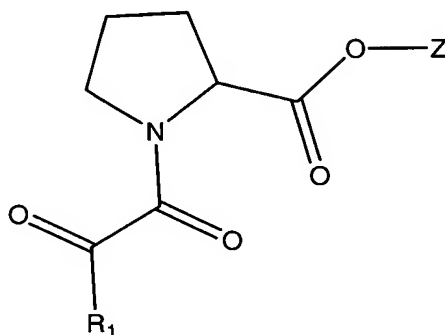
96. A method as claimed in Claim 95 in which the compound is selected from the group consisting of:

- 3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 5 3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3,4,5-trimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 3-(3,4,5-trimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-
- 10 (3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4,5-dichlorophenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4,5-dichlorophenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-
- (3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 15 3-(4,5-methylenedioxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 3-(4,5-methylenedioxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 20 3-cyclohexyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-cyclohexyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- (1*R*)-1,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-
- 25 dioxopentyl)-2-pyrrolidinecarboxylate;
- (1*R*)-1,3-diphenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- (1*R*)-1-cyclohexyl-3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 30 (1*R*)-1-cyclohexyl-3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

- (1R)-1-(4,5-dichlorophenyl)-3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-cyclohexyl)ethyl-2-pyrrolidinecarboxylate;
- 5 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-4-cyclohexyl)butyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate;
- 10 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])ethyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-phenyl)ethyl-
- 15 2-pyrrolidinecarboxylate;
- 1,7-diphenyl-4-heptyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxo-4-hydroxybutyl)-2-pyrrolidinecarboxylate;
- 20 3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxamide;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine ethyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-
- 25 leucine ethyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylglycine ethyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine phenyl ester;
- 30 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine benzyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-isoleucine ethyl ester; and

pharmaceutically acceptable salts, esters, and solvates thereof.

97. A method as claimed in Claim 95 in which the  
5 sensorineurotrophic compound is a compound of formula XXVI:



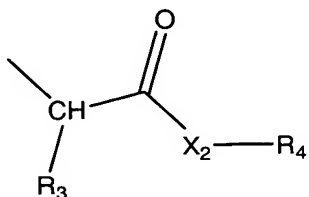
(XXVI)

or a pharmaceutically acceptable salt, ester, or solvate  
10 thereof, wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub>  
straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-  
C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted  
or substituted with one or more substituents  
15 independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>  
alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl,  
hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the  
group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-  
20 indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-  
pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said  
Ar<sub>1</sub> is unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of hydrogen, halo, hydroxy, nitro,  
25 trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,  
C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy,  
C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

Z is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



wherein:

10        R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

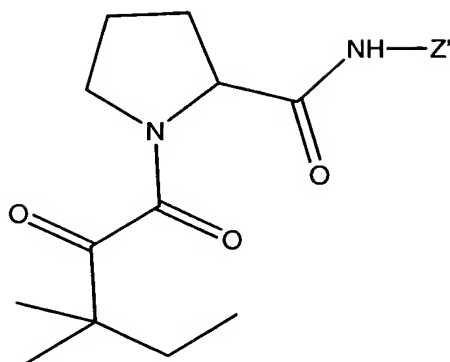
      X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

15        R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl.

98. A method as claimed in Claim 58 in which the sensorineurotrophic agent may be a compound of formula

25    XXVII:

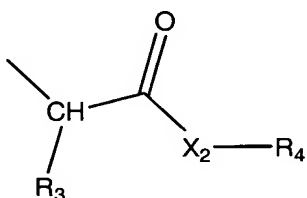




(XXVII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5        Z' is the fragment



wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or unsubstituted Ar<sub>1</sub>, wherein said alkyl is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

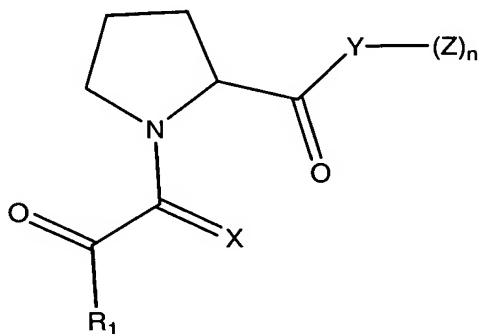
X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently

selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino.

99. A method as claimed in Claim 95 in which the sensorineurotrophic agent may also be a compound of formula XXVIII:



(XXVIII)

wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl or Ar<sub>1</sub>, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>3</sub>-C<sub>6</sub> cycloalkyl or Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 2-furyl, 2-thienyl, and phenyl;

X is selected from the group consisting of oxygen and sulfur;

Y is oxygen or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl;

each Z, independently, is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of 2-furyl, 2-thienyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, pyridyl, and phenyl, each having one or more

substituent(s) independently selected from the group consisting of hydrogen and C<sub>1</sub>-C<sub>4</sub> alkoxy; and n is 1 or 2.

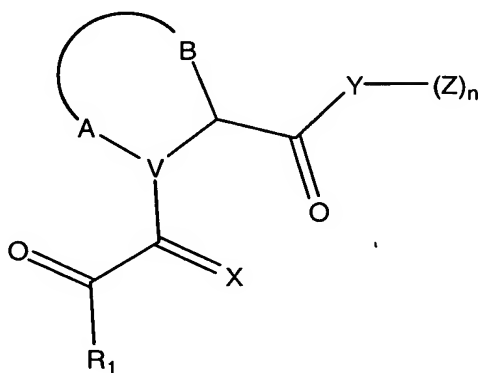
- 5 100. A method as claimed in Claim 99 in which the compound is selected from the group consisting of:
- 3-(2,5-dimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(2,5-dimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-  
10 (3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 2-(3,4,5-trimethoxyphenyl)-1-ethyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 15 3-(2-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 20 3-phenyl-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidine-carboxylate;
- 25 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 30 3-(3-pyridyl)-1-propyl (2*S*)-N-([2-thienyl]glyoxyl)pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate;

3,3-diphenyl-1-propyl (2*S*)-1-cyclohexylglyoxyl-  
2-pyrrolidinecarboxylate;

3,3-diphenyl-1-propyl (2*S*)-1-(2-thienyl)glyoxyl-2-  
pyrrolidinecarboxylate; and

5        pharmaceutically acceptable salts, esters, and  
solvates thereof.

101. A method as claimed in Claim 58 in which the  
sensorineurotrophic compound is a compound of formula  
10    XXIX:



(XXIX)

or a pharmaceutically acceptable salt, ester, or solvate  
thereof, wherein:

15        V is CH, N, or S;

A and B, together with V and the carbon atom to  
which they are respectively attached, form a 5-7 membered  
saturated or unsaturated heterocyclic ring containing, in  
addition to V, one or more heteroatom(s) independently  
20        selected from the group consisting of O, S, SO, SO<sub>2</sub>, N,  
NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl,  
C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub>  
cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is  
25        either unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl,

carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

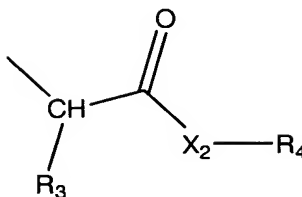
R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



wherein:

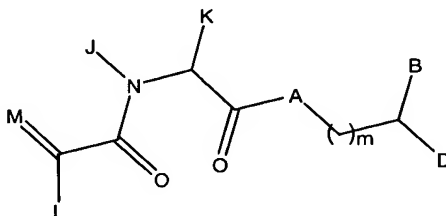
R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

5 X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

R<sub>4</sub> is selected from the group consisting of phenyl,  
10 benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and,  
15 n is 1 or 2.

102. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula (LV):

20



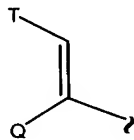
(LV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25 m is 0-3;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



15

wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and  
T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein Ar contains 1-3

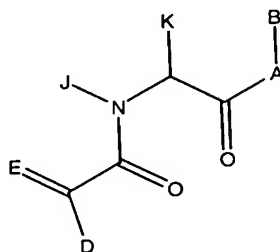
substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
 5 (C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;

L is either hydrogen or U; M is either oxygen or CH-U, provided that if L is hydrogen, then M is CH-U, or if  
 10 M is oxygen then L is U;

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
 15 cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or  
 20 cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

103. A method as claimed in Claim 58 in which the  
 25 sensorineurotrophic compound is a compound of formula (LVI):



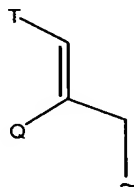


(LVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A is O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

5 B is hydrogen, CHL-Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, Ar substituted C<sub>1</sub>-C<sub>6</sub> alkyl or C<sub>2</sub>-C<sub>6</sub> alkenyl, or



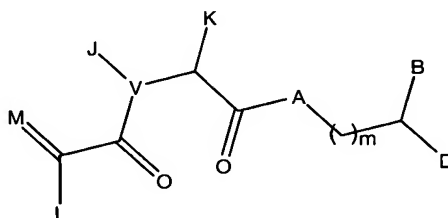
10

wherein L and Q are independently hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and  
15 T is Ar or C<sub>5</sub>-C<sub>7</sub> cyclohexyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
20

Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl having 1-3 substituent(s) independently selected from the group  
25 consisting of hydrogen, halo, hydroxy, nitro, CF<sub>3</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, and phenyl.

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub>-cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, 2-indolyl, 3-indolyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

104. A method as claimed in Claim 58 in which the  
sensorineurotrophic compound is a compound of formula  
20 LVIII:



(LVIII)

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s)

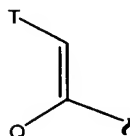
selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



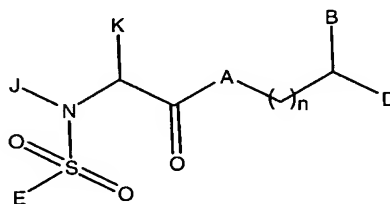
- wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
5 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl; and  
T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
positions 3 and 4 with substituents  
independently selected from the group  
10 consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
Ar is selected from the group consisting of 1-  
naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl,  
15 monocyclic and bicyclic heterocyclic ring systems with  
individual ring sizes being 5 or 6 which contain in  
either or both rings a total of 1-4 heteroatom(s)  
independently selected from the group consisting of  
oxygen, nitrogen and sulfur; wherein Ar contains 1-3  
20 substituent(s) independently selected from the group  
consisting of hydrogen, halo, hydroxy, hydroxymethyl,  
nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched  
chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub>  
25 straight or branched chain alkenyl), O-benzyl, O-phenyl,  
amino, 1,2-methylenedioxy, carbonyl, and phenyl;  
L is either hydrogen or U; M is either oxygen or CH-  
U, provided that if L is hydrogen, then M is CH-U, or if  
M is oxygen then L is U;  
30 U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain  
alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-  
C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or

branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

- 5 J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

10

105. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of the formula (LIX):



15

(LIX)

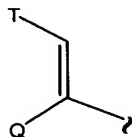
or a pharmaceutically acceptable salt, ester or solvate thereof, wherein:

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

20

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or

25



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

5 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

10 provided that both B and D are not hydrogen;

Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring  
15 sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro,  
20 trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

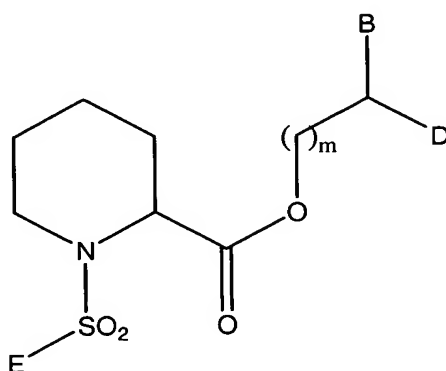
25 E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

30 J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl, or cyclohexylmethyl; or J and K are taken together to form a

5-7 membered heterocyclic ring which is substituted with  
O, S, SO, or SO<sub>2</sub>;

n is 0 to 3.

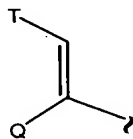
- 5 106. A method as claimed in Claim 58 in which the  
sensorineurotrophic compound is a compound of Formula  
LXI:



(LXI)

or a pharmaceutically acceptable salt, ester or solvate  
thereof, wherein:

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub>  
straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl, wherein said alkyl or alkenyl is  
unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
cycloalkenyl or Ar, and wherein one or two carbon atom(s)  
of said alkyl or alkenyl may be substituted with one or  
two heteroatom(s) independently selected from the group  
consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable  
substitution patterns, or



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

5 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

provided that both B and D are not hydrogen;

10 Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings  
15 a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
20 branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

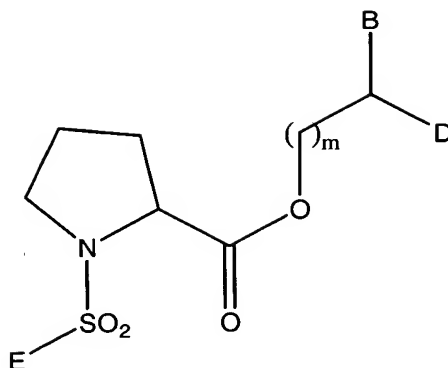
E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
25 straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar; and

m is 0 to 3.

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107. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of Formula (LXII):

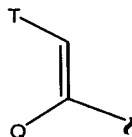




(LXII)

or a pharmaceutically acceptable salt thereof, wherein:

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub>  
 5 straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
 branched chain alkenyl, wherein said alkyl or alkenyl is  
 unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
 cycloalkenyl, or Ar, and wherein one or two carbon  
 atom(s) of said alkyl or alkenyl may be substituted with  
 10 one or two heteroatom(s) independently selected from the  
 group consisting of O, S, SO, and SO<sub>2</sub> in chemically  
 reasonable substitution patterns, or



15

wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
 branched chain alkenyl; and

T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
 20 positions 3 and 4 with one or more  
 substituent(s) independently selected from the  
 group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
 alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

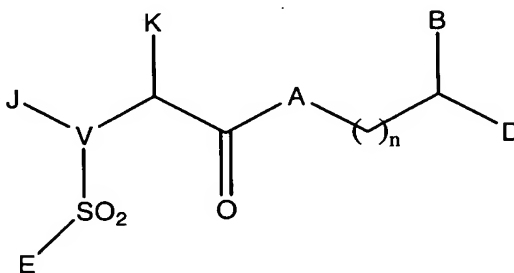
provided that both B and D are not hydrogen;

Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar; and

m is 0 to 3.

108. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of Formula LXIII:



(LXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

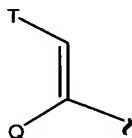
R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group

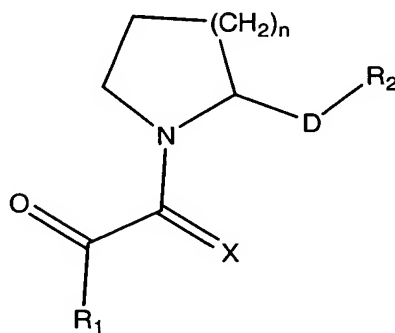
consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



- 5        wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
         branched chain alkenyl; and  
         T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
         positions 3 and 4 with one or more  
10        substituent(s) independently selected from the  
         group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
         alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
         provided that both B and D are not hydrogen;  
         Ar is selected from the group consisting of phenyl,  
15        1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
         thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and  
         bicyclic heterocyclic ring systems with individual ring  
         sizes being 5 or 6 which contain in either or both rings  
         a total of 1-4 heteroatoms independently selected from  
20        the group consisting of O, N, and S; wherein Ar contains  
         1-3 substituent(s) independently selected from the group  
         consisting of hydrogen, halo, hydroxy, nitro,  
         trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
25        alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-  
         (C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-  
         phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;  
         E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
         straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-  
30        C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or  
         branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain  
         alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl, or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with  
5 O, S, SO, or SO<sub>2</sub>;  
n is 0 to 3.

109. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula  
10 (LXIV):



(LXIV)

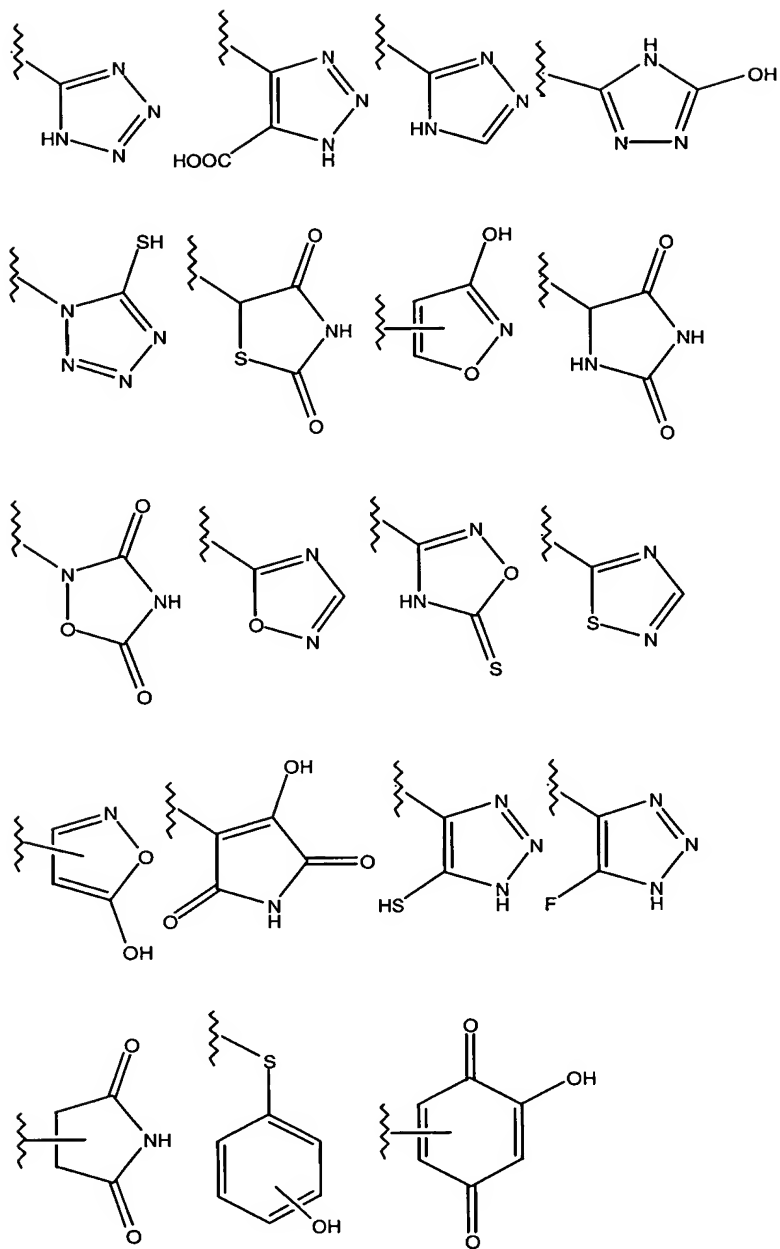
in which:

- n is 1-3;  
15 X is either O or S;  
R<sub>1</sub> is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;  
20 D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl; and  
R<sub>2</sub> is a carboxylic acid or a carboxylic acid isostere; or a pharmaceutically acceptable salt, ester, or solvate thereof.

25

110. A method as claimed in Claim 109 in which.

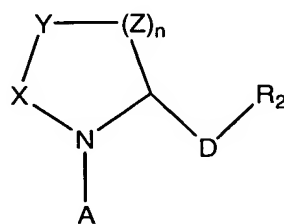
R<sub>2</sub> is selected from the group:



- 5 -COOH, -SO<sub>3</sub>H, -SO<sub>2</sub>HNR<sup>3</sup>, -PO<sub>2</sub>(R<sup>3</sup>)<sub>2</sub>, -CN, -PO<sub>3</sub>(R<sup>3</sup>)<sub>2</sub>, -OR<sup>3</sup>, -SR<sup>3</sup>, -NHCOR<sup>3</sup>, -N(R<sup>3</sup>)<sub>2</sub>, -CON(R<sup>3</sup>)<sub>2</sub>, -CONH(O)R<sup>3</sup>, -CONHNHSO<sub>2</sub>R<sup>3</sup>, -COHNSO<sub>2</sub>R<sup>3</sup>, and -CONR<sup>3</sup>CN wherein R<sup>3</sup> is hydrogen, hydroxy, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, C<sub>1</sub>-C<sub>6</sub>-alkylaryloxy, aryloxy, aryl-C<sub>1</sub>-C<sub>6</sub>-alkyloxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-

alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl.

111. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula (LXV):



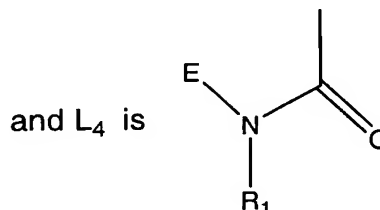
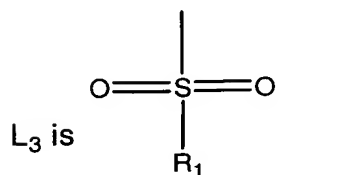
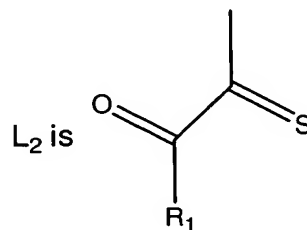
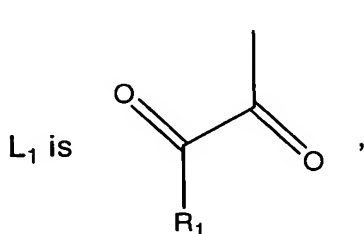
(LXV)

in which

X, Y, and Z are independently selected from the group consisting of C, O, S, or N, provided that X, Y, and Z are not all C;

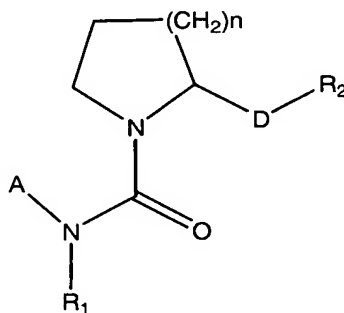
n is 1-3;

A is selected from the group consisting of L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub>, or L<sub>4</sub>, in which



and  $R_1$  and  $E$ , independently, are selected from the group consisting of hydrogen,  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;  
5  $R_2$  is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents  
10 selected from  $R^3$ , where  
 $R^3$  is hydrogen, hydroxy, halo, halo( $C_1$ - $C_6$ )-alkyl, thiocarbonyl, ( $C_1$ - $C_6$ )-alkoxy, ( $C_2$ - $C_6$ )-alkenoxy, ( $C_1$ - $C_6$ )-alkylaryloxy, aryloxy, aryl-( $C_1$ - $C_6$ )-alkyloxy, cyano, nitro, imino, ( $C_1$ - $C_6$ )-alkylamino, amino-( $C_1$ - $C_6$ )-alkyl,  
15 sulfhydryl, thio-( $C_1$ - $C_6$ )-alkyl, ( $C_1$ - $C_6$ )-alkylthio, sulfonyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or  $CO_2R^4$  where  $R^4$  is hydrogen or  $C_1$ - $C_9$  straight or branched chain alkyl or  
20 alkenyl;  
or a pharmaceutically acceptable salt, ester, or solvate thereof.

112. A method as claimed in Claim 58 in which the  
25 sensorineurotrophic compound is a compound of formula (LXVI):



(LXVI)



in which:

n is 1-3;

R<sub>1</sub> and A are independently selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;

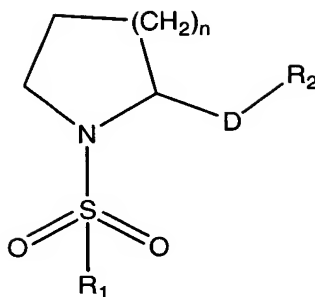
D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl;

R<sub>2</sub> is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents selected from R<sup>3</sup>, where

R<sup>3</sup> is hydrogen, hydroxy, halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, (C<sub>1</sub>-C<sub>6</sub>)-alkylaryloxy, aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl;

or a pharmaceutically acceptable salt, ester, or solvate thereof.

113. A method as claimed in Claim 58 in which the sensorineurotrophic compound is a compound of formula (LXVII):



(LXVII)

in which:

n is 1-3;

5  $\text{R}_1$  is selected from the group consisting of hydrogen,  $\text{C}_1$ - $\text{C}_9$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_9$  straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;

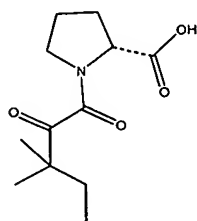
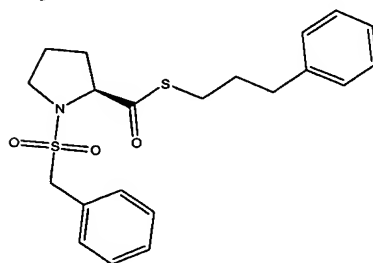
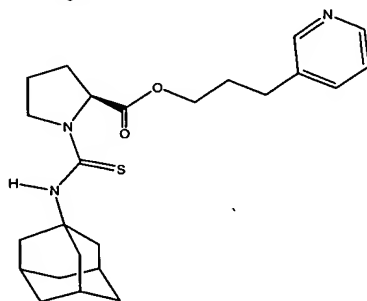
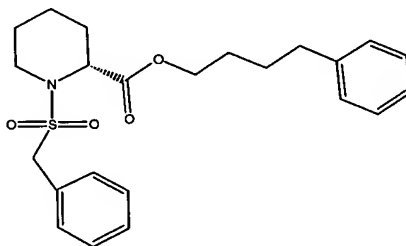
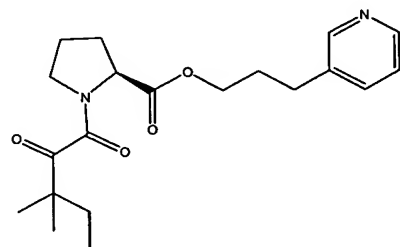
10 D is a bond, or a  $\text{C}_1$ - $\text{C}_{10}$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_{10}$  alkenyl or  $\text{C}_2$ - $\text{C}_{10}$  alkynyl;

$\text{R}_2$  is a carboxylic acid or a carboxylic acid isostere;

wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is  
15 optionally substituted with one or more substituents selected from  $\text{R}^3$ , where

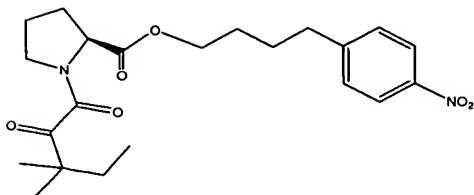
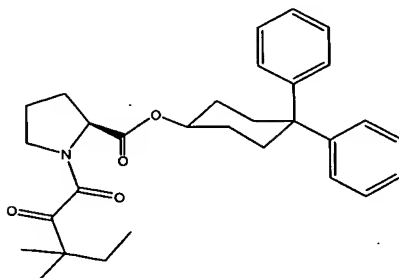
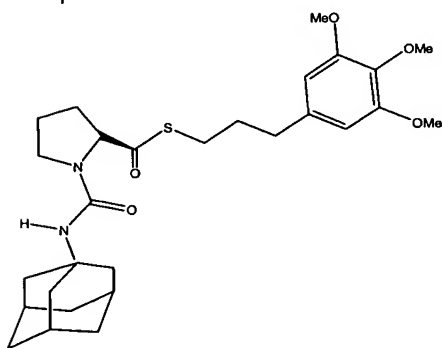
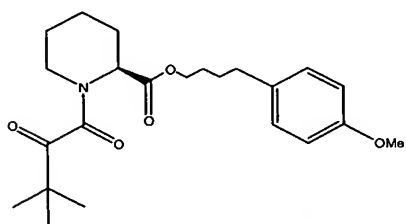
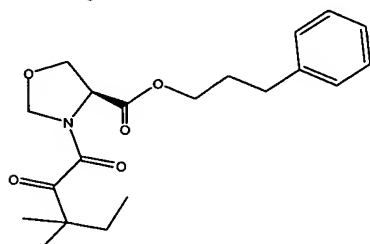
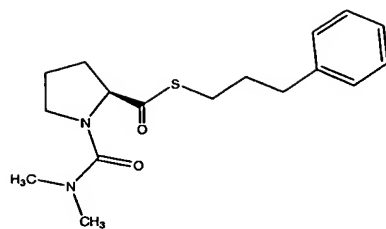
$\text{R}^3$  is hydrogen, hydroxy, halo, , halo- $(\text{C}_1$ - $\text{C}_6)$ -alkoxy, thiocarbonyl,  $(\text{C}_1$ - $\text{C}_6)$ -alkoxy,  $(\text{C}_2$ - $\text{C}_6)$ -alkenyloxy,  $(\text{C}_1$ - $\text{C}_6)$ -alkylaryloxy, aryloxy, aryl- $(\text{C}_1$ - $\text{C}_6)$ -alkyloxy, cyano,  
20 nitro, imino,  $(\text{C}_1$ - $\text{C}_6)$ -alkylamino, amino- $(\text{C}_1$ - $\text{C}_6)$ -alkyl, sulfhydryl, thio- $(\text{C}_1$ - $\text{C}_6)$ alkyl,  $(\text{C}_1$ - $\text{C}_6)$ -alkylthio, sulfonyl,  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or  $\text{CO}_2\text{R}^4$  where  $\text{R}^4$  is  
25 hydrogen or  $\text{C}_1$ - $\text{C}_9$  straight or branched chain alkyl or alkenyl;  
or a pharmaceutically acceptable salt, ester or solvate thereof.

114. A method for the prevention or treatment of injury  
or degeneration of inner ear sensory cells which  
comprises administering to a warm-blooded animal a  
5 compound selected from the group comprising:



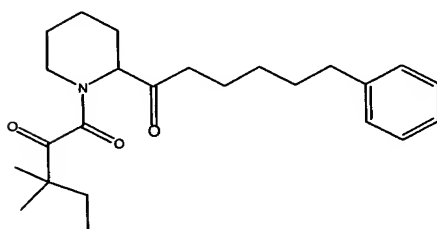
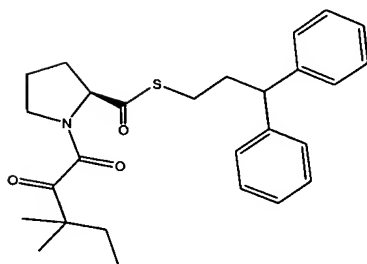
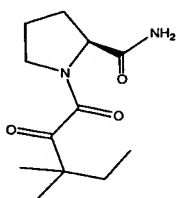
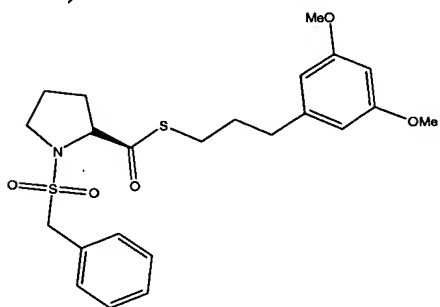
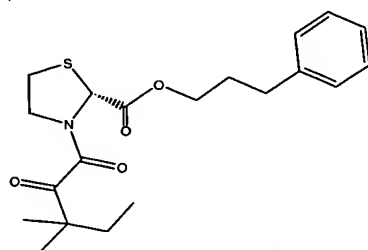
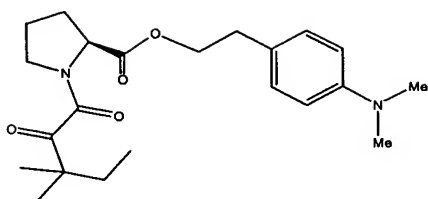
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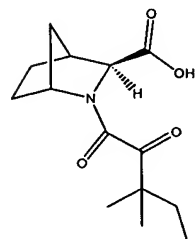
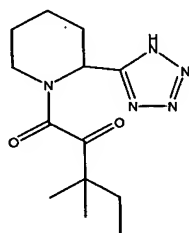
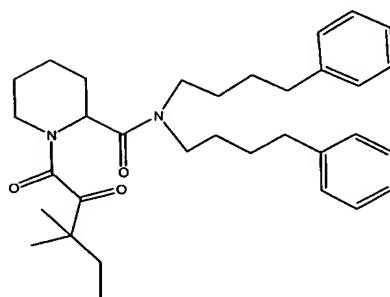
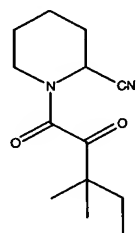
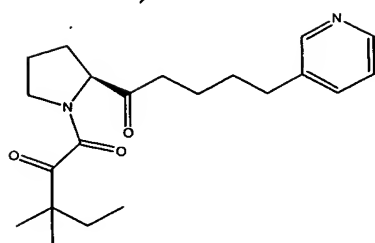
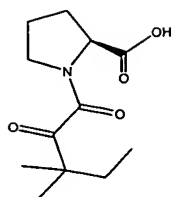
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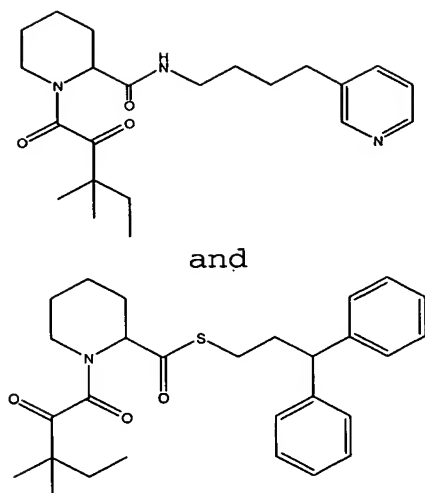
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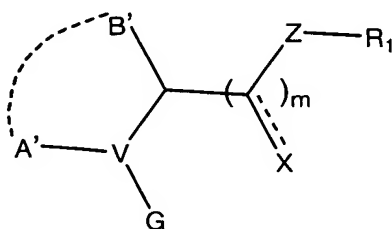
-519-





or a pharmaceutically acceptable salt, ester or solvate thereof.

- 5 115. A method for the prevention or treatment of a vestibular disorder which comprises administering to a warm-blooded animal a sensorineurotrophic compound of the formula (I'):



(I')

wherein

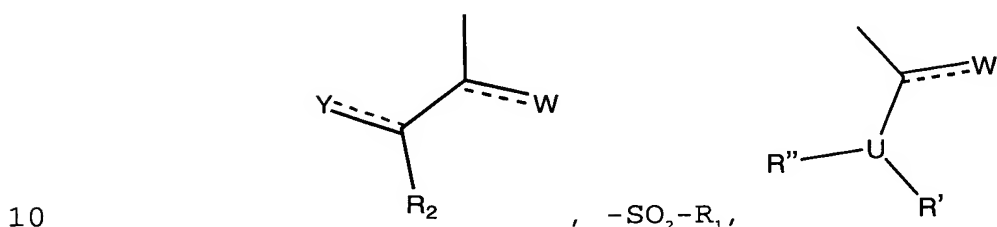
15 A' is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl;

B' is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or,

A' and B', taken together with the atoms to which they are attached, form a 5-7 membered saturated, unsaturated or aromatic heterocyclic or carbocyclic ring which contains one or more additional O, C(R<sub>1</sub>)<sub>2</sub>, S(O)<sub>p</sub>, N, NR<sub>1</sub>, or NR<sub>5</sub> atoms;

V is CH, S, or N;

G is

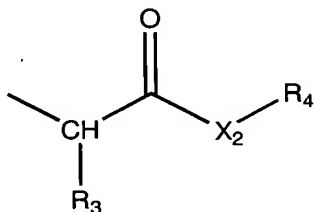


each R<sub>1</sub>, independently, is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>5</sub>-C<sub>6</sub> cycloalkenyl, a carboxylic acid or carboxylic acid isostere, N(R<sub>4</sub>)<sub>n</sub>, Ar<sub>1</sub>, Ar<sub>4</sub> or K-L wherein said alkyl, cycloalkyl, cycloalkenyl, alkynyl, alkenyl, Ar<sub>1</sub> or Ar<sub>4</sub> is optionally substituted with one or more substituent(s) independently selected from the group consisting of:

2-furyl, 2-thienyl, pyridyl, phenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl wherein said furyl, thienyl, pyridyl, phenyl or cycloalkyl group optionally is substituted with C<sub>1</sub>-C<sub>4</sub> alkoxy, (Ar<sub>1</sub>)<sub>n</sub>, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub> thioester, cyano, imino, COOR<sub>6</sub> in which R<sub>6</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or alkenyl, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, C<sub>1</sub>-C<sub>6</sub> alkylaryloxy C<sub>1</sub>-C<sub>6</sub> aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio,



5       sulfhydryl, sulfonyl, amino, (C<sub>1</sub>-C<sub>6</sub>)-mono- or  
di-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl,  
aminocarboxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched  
chain alkenyl optionally substituted with  
10       (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched  
chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>, and, wherein any  
carbon atom of an alkyl or alkenyl group may  
optionally replaced with O, NR<sub>5</sub>, or S(O)<sub>p</sub>; or,  
R<sub>1</sub> is a moiety of the formula:



15       wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which  
is optionally substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl  
or Ar<sub>1</sub>;

20       X<sub>2</sub> is O or NR<sub>6</sub>, wherein R<sub>6</sub> is selected from the  
group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl;

25       R<sub>4</sub> is selected from the group consisting of  
phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain  
alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl,  
C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl  
substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or  
30       branched chain alkenyl substituted with phenyl;

$R_2$  is  $C_1-C_9$  straight or branched chain alkyl,  $C_2-C_9$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl or  $Ar_1$ , wherein said alkyl, alkenyl, cycloalkyl, or  
5 cycloalkenyl is optionally substituted with one or more substituents selected from the group consisting of  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,  $(Ar_1)_n$  and  
10 hydroxy; or,

$R_2$  is either hydrogen or P; Y is either oxygen or CH-P, provided that if  $R_2$  is hydrogen, then Y is CH-P, or if Y is oxygen then  $R_2$  is P;

15

P is hydrogen, O- $(C_1-C_4$  straight or branched chain alkyl), O- $(C_2-C_4$  straight or branched chain alkenyl),  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain  
20 alkenyl,  $C_5-C_7$  cycloalkyl,  $C_5-C_7$  cycloalkenyl substituted with  $C_1-C_4$  straight or branched chain alkyl or  $C_2-C_4$  straight or branched chain alkenyl,  $(C_1-C_4$  alkyl or  $C_2-C_4$  alkenyl)- $Ar_5$ , or  
25  $Ar_5$

25

$Ar_1$  or  $Ar_2$ , independently, is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is optionally substituted with one or more  
30 substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl,  $C_1-C_6$  straight or branched chain alkyl,  $C_2-C_6$  straight or branched chain alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,  
35  $C_1-C_4$  alkoxy,  $C_2-C_4$  alkenyloxy, phenoxy,

benzyloxy, and amino; wherein the individual ring contains 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S, and, wherein any aromatic or tertiary alkylamine is optionally oxidized to a corresponding N-oxide;

m is 0 or 1

n is 1 or 2;

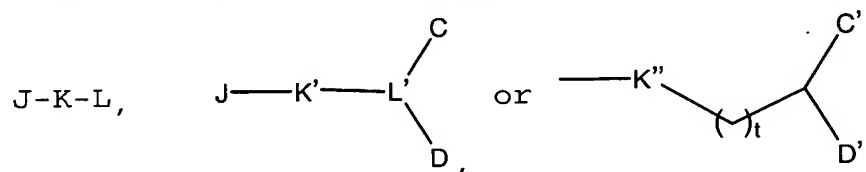
p is 0, 1, or 2;

t is 0, 1, 2, 3, or 4;

X is O, CH<sub>2</sub> or S;

W and Y, independently, are O, S, CH<sub>2</sub> or H<sub>2</sub>;

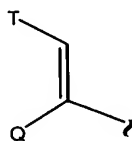
Z is C(R<sub>1</sub>)<sub>2</sub>, O, S, a direct bond or NR<sub>1</sub>; or, Z-R<sub>1</sub> is



wherein:

C and D are, independently, hydrogen, Ar<sub>4</sub>, Ar<sub>1</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, Ar<sub>1</sub> and Ar<sub>4</sub>; wherein said

- alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, haloalkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub> ester, C<sub>1</sub>-C<sub>6</sub> thioester, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub> alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>, or (SO)<sub>p</sub>;
- C' and D' are independently hydrogen, Ar<sub>5</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>5</sub>, wherein, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



- wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

T is Ar<sub>5</sub> or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl  
5 J is O, NR<sub>1</sub>, S, or (CR<sub>1</sub>)<sub>2</sub>;

K is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
10 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar<sub>3</sub>; wherein said  
15 alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub>, is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl or Ar<sub>3</sub>, is optionally  
20 replaced with O, NR''', or S(O)<sub>p</sub>;

K' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said  
25 alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, haloalkyl, thiocarbonyl, ester, thioester, alkoxy, alkenoxy, cyano, nitro, imino, alkylamino, aminoalkyl, sulfhydryl, thioalkyl, sulfonyl, or oxygen to form a carbonyl, or  
30 wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NR<sub>5</sub>,  
35 S(O)<sub>p</sub>;

K'' is  $C(R_1)_2$ , O, S, a direct bond or  $NR_1$ ,

5 R''' is selected from the group consisting of  
hydrogen,  $C_1-C_4$  straight or branched chain  
alkyl,  $C_3-C_4$  straight or branched chain alkenyl  
or alkynyl, and  $C_1-C_4$  bridging alkyl wherein a  
bridge is formed between the nitrogen and a  
carbon atom of said alkyl or alkenyl chain  
10 containing said heteroatom to form a ring,  
wherein said ring is optionally fused to an Ar,  
group;

15 L is an aromatic amine or a tertiary amine  
oxidized to a corresponding N-oxide;  
said aromatic amine being selected from the  
group consisting of pyridyl, pyrimidyl,  
quinolinyl, and isoquinolinyl, said aromatic  
amine being optionally substituted with one or  
20 more substituent(s) independently selected from  
the group consisting of halo, hydroxy, nitro,  
trifluoromethyl,  $C_1-C_6$  straight or branched  
chain alkyl,  $C_2-C_6$  straight or branched chain  
alkenyl,  $C_1-C_4$  alkoxy,  $C_2-C_4$  alkenyloxy, phenoxy,  
25 benzyloxy, and amino; and wherein

said tertiary amine is  $NR_xR_yR_z$ , wherein  $R_x$ ,  
 $R_y$ , and  $R_z$  are independently selected from the  
group consisting of  $C_1-C_6$  straight or branched  
chain alkyl and  $C_2-C_6$  straight or branched chain  
30 alkenyl; wherein said alkyl or alkenyl is  
optionally substituted with one or more  
substituent(s) independently selected from the  
group consisting of  $C_1-C_6$  straight or branched  
chain alkyl,  $C_2-C_6$  straight or branched chain  
35 alkenyl,  $C_3-C_8$  cycloalkyl,  $C_5-C_7$  cycloalkenyl,,  
hydroxy, carbonyl oxygen, and  $Ar_3$ ; wherein said

alkyl, alkenyl, cycloalkyl, cycloalkenyl, or  
Ar<sub>3</sub> is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl,  
C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen;  
wherein any carbon atom of said alkyl, alkenyl,  
5 cycloalkyl, cycloalkenyl, or Ar<sub>3</sub> is optionally  
replaced with O, NR', S(O)<sub>p</sub>;

L' is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched  
chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched  
10 chain alkenyl, wherein any carbon atom of said  
alkyl or alkenyl is optionally substituted in  
one or more position(s) with amino, halo,  
haloalkyl, thiocarbonyl, ester, thioester,  
alkoxy, alkenoxy, cyano, nitro, imino,  
15 alkylamino, aminoalkyl, sulfhydryl, thioalkyl,  
sulfonyl, or oxygen to form a carbonyl, or  
wherein any carbon atom of said alkyl or  
alkenyl is optionally replaced with O, NR<sub>5</sub>,  
S(O)<sub>p</sub>

20 Ar<sub>3</sub> is selected from the group consisting of  
pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl,  
pyridazyl, quinolinyl, and isoquinolinyl; or,

25 Ar<sub>4</sub> is an alicyclic or aromatic, mono-, bi- or  
tricyclic, carbo- or heterocyclic ring, wherein  
the ring is optionally substituted with one or  
more substituent(s) independently selected from  
the group consisting of alkylamino, amido,  
30 amino, aminoalkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub>  
straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy,  
C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched  
chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
cycloalkenyl, carbonyl, carboxy, cyano, diazo,  
35 ester, formanilido, halo, haloalkyl, hydroxy,

imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thioalkyl, thiocarbonyl, thiocyano, thioester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual alicyclic or aromatic ring contains 5-8 members and wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Ar<sub>5</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein Ar<sub>5</sub> optionally contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;



R<sub>5</sub> is selected from the group consisting of  
hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl  
or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a  
5 bridge is formed between the nitrogen and a  
carbon atom of said alkyl or alkenyl chain  
containing said heteroatom to form a ring,  
wherein said ring is optionally fused to an Ar<sub>4</sub>  
or Ar<sub>1</sub> group;

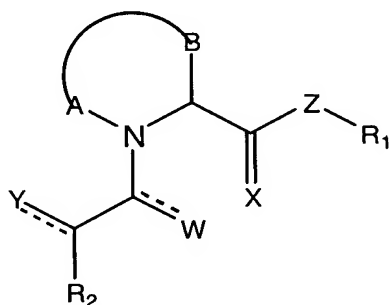
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U is either O or N, provided that:  
when U is O, then R' is a lone pair of electrons and  
R'' is selected from the group consisting of  
Ar<sub>4</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>9</sub> straight or  
15 branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or  
branched chain alkenyl, wherein said alkyl or  
alkenyl is optionally substituted with one or  
more substituent(s) independently selected from  
the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub>  
20 cycloalkyl; and

when U is N, then R' and R'' are, independently,  
selected from the group consisting of  
hydrogen, Ar<sub>4</sub>, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, a C<sub>7</sub>-C<sub>12</sub> bi- or  
25 tri-cyclic carbocycle, C<sub>1</sub>-C<sub>9</sub> straight or  
branched chain alkyl, and C<sub>2</sub>-C<sub>9</sub> straight or  
branched chain alkenyl, wherein said alkyl or  
alkenyl is optionally substituted with one or  
more substituent(s) independently selected from  
30 the group consisting of Ar<sub>4</sub> and C<sub>3</sub>-C<sub>8</sub>  
cycloalkyl; or R' and R'' are taken together to  
form a heterocyclic 5- or 6-membered ring  
selected from the group consisting of

a pharmaceutically acceptable salt, ester or solvate  
5 thereof.

10



(I)

A and B, together with the nitrogen and carbon atoms  
15 to which they are respectively attached, form a 5-7  
membered saturated or unsaturated heterocyclic ring  
containing one or more heteroatom(s) independently  
selected from the group consisting of O, S, SO, SO<sub>2</sub>, N,  
NH, and NR<sub>2</sub>;

```
20      X is either 0 or S;
```

Z is either S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain

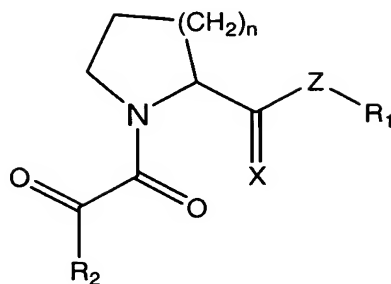
alkenyl substituted with  $(Ar_1)_n$ , C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

5           n is 1 or 2;

          R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either  
10 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxy; and

          Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or  
15 aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
20 alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N,  
25 and S.

117. A method as claimed in Claim 116 in which the sensorineurotrophic compound is a compound of formula II:



(II)

or a pharmaceutically acceptable salt, ester, or solvate  
5 thereof, wherein:

n is 1 or 2;

X is O or S;

Z is selected from the group consisting of S, CH<sub>2</sub>,  
CHR<sub>1</sub>, and CR<sub>1</sub>R<sub>3</sub>;

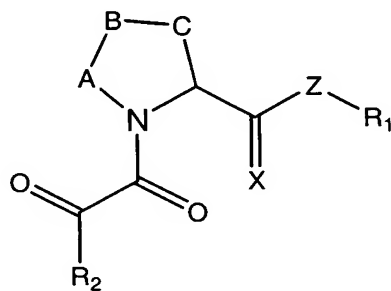
10 R<sub>1</sub> and R<sub>3</sub> are independently selected from the group  
consisting of C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-  
C<sub>5</sub> straight or branched chain alkenyl, and Ar<sub>1</sub>, wherein  
said alkyl, alkenyl or Ar<sub>1</sub> is unsubstituted or  
substituted with one or more substituent(s) independently  
15 selected from the group consisting of halo, nitro, C<sub>1</sub>-C<sub>6</sub>  
straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub>  
alkenyloxy, phenoxy, benzyloxy, amino, and Ar<sub>1</sub>;

R<sub>2</sub> is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub>  
20 straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or  
branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
cycloalkenyl, and Ar<sub>1</sub>; and

Ar<sub>1</sub> is phenyl, benzyl, pyridyl, fluorenyl,  
thioindolyl or naphthyl, wherein said Ar<sub>1</sub> is  
25 unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of halo, trifluoromethyl, hydroxy, nitro, C<sub>1</sub>-  
C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or

branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino.

118. A method as claimed in Claim 116 in which the  
5 sensorineurotrophic compound is a compound of formula  
III:



(III)

10

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B, and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

15

X is O or S;

Z is S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted  
20 with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
25 and Ar<sub>2</sub>;

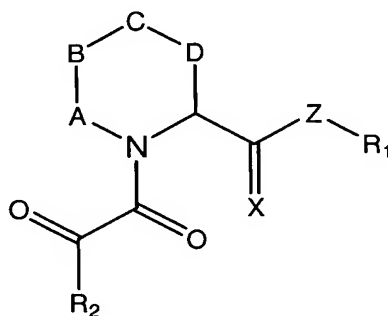
n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub>

cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

119. A method as claimed in Claim 116 in which the sensorineurotrophic compound is a compound of formula IV:



(IV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B, C and D are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

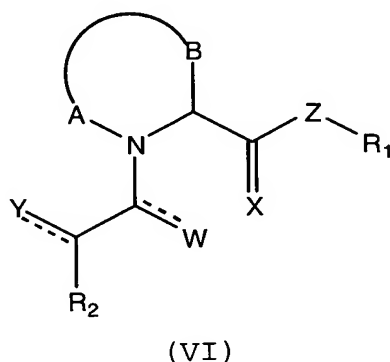
X is O or S;

Z is S, CH<sub>2</sub>, CHR<sub>1</sub> or CR<sub>1</sub>R<sub>3</sub>;

- 5        R<sub>1</sub> and R<sub>3</sub> are independently C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or
- 10        branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;
- 15        n is 1 or 2;
- R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either
- 20        unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and
- 25        Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein said ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl,
- 30        nitro, trifluoro-methyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s)

independently selected from the group consisting of O, N, and S.

120. A method as claimed in Claim 115 in which the  
5 sensorineurotrophic agent may be a compound of formula VI:



10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring  
15 containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

X is O or S;

Z is O, NH or NR<sub>1</sub>;

20 W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or  
25 branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or

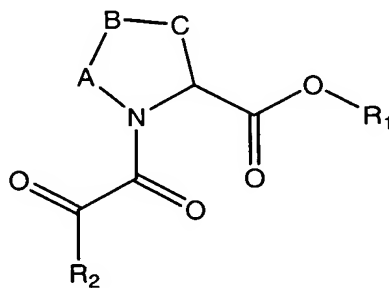


branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and Ar<sub>2</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

121. The method of Claim 120 in which the sensorineurotrophic compound is a compound of formula VII:



(VII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A, B and C are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

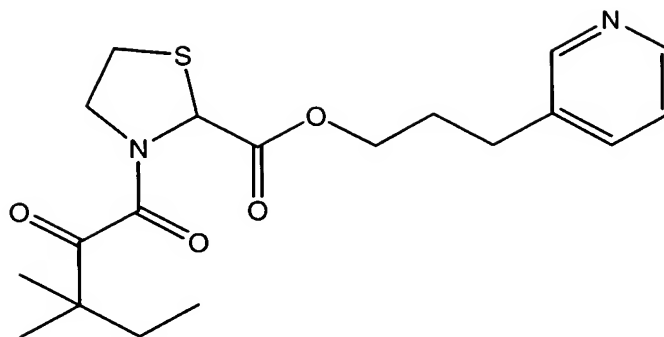
5        R<sub>1</sub> is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of (Ar<sub>1</sub>)<sub>n</sub> and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
10 alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>;

n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>; and

15        Ar<sub>1</sub> is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C<sub>1</sub>-  
20 C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected  
25 from the group consisting of O, N, and S.

122. The method of Claim 121 in which the sensorineurotrophic compound is:



123. A method as claimed in Claim 121 in which:

A is CH<sub>2</sub>;

5 B is CH<sub>2</sub> or S;

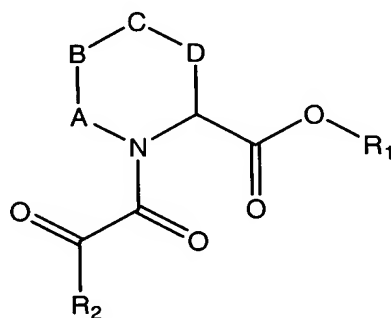
C is CH<sub>2</sub> or NH;

R<sub>1</sub> is selected from the group consisting of 3-phenylpropyl and 3-(3-pyridyl)propyl; and

10 R<sub>2</sub> is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, and *tert*-butyl.

124. A method as claimed in Claim 120 in which the sensorineurotrophic compound is a compound of formula VIII:

15



(VIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

20 A, B, C and D are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

$R_1$  is  $C_1$ - $C_5$  straight or branched chain alkyl or  $C_2$ - $C_5$  straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected from the group consisting of  $(Ar_1)_n$  and  $C_1$ - $C_6$  straight or branched chain alkyl or  $C_2$ - $C_6$  straight or branched chain alkenyl substituted with  $(Ar_1)_n$ ;

$n$  is 1 or 2;

$R_2$  is either  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, or  $Ar_1$ ; and

$Ar_1$  is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_1$ - $C_4$  alkoxy,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S.

125. A method of Claim 124 in which:

A is  $CH_2$ ;

25 B is  $CH_2$ ;

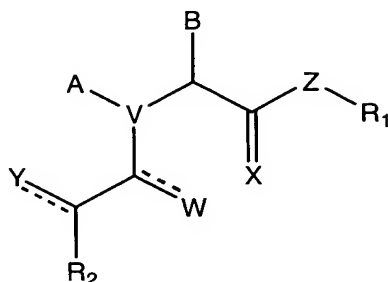
C is S, O or NH;

D is  $CH_2$ ;

$R_1$  is selected from the group consisting of 3-phenylpropyl and (3,4,5-trimethoxy)phenylpropyl; and

30  $R_2$  is selected from the group consisting of 1,1-dimethylpropyl, cyclohexyl, *tert*-butyl, phenyl, and 3,4,5-trimethoxyphenyl.

126. A method as claimed in Claim 115 in which the sensorineurotrophic agent may be a compound of formula IX:



(IX)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;

wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

X is O or S;

5 Z is O, NH or NR<sub>1</sub>;

W and Y are independently O, S, CH<sub>2</sub> or H<sub>2</sub>;

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, which is substituted with one or more substituent(s) independently selected  
10 from the group consisting of (Ar<sub>1</sub>)<sub>n</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with (Ar<sub>1</sub>)<sub>n</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl,  
15 and Ar<sub>2</sub>;

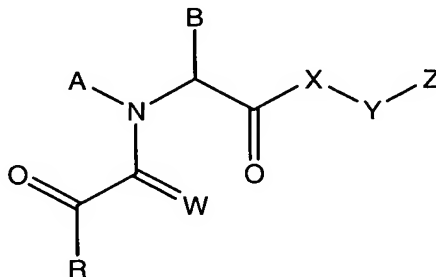
n is 1 or 2;

R<sub>2</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain or alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein said  
20 alkyl, alkenyl, cycloalkyl or cycloalkenyl is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, and hydroxyl; and

25 Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxyl,  
30 nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino; wherein the individual ring size is 5-8 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s)

independently selected from the group consisting of O, N, and S.

127. A method as claimed in Claim 115 in which the  
5 sensorineurotrophic compound is a compound of formula X:



(X)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

10 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing one or more heteroatom(s) independently selected from the group consisting of CH, CH<sub>2</sub>, O, S, SO,  
15 SO<sub>2</sub>, N, NH, and NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted  
20 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or  
25 more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

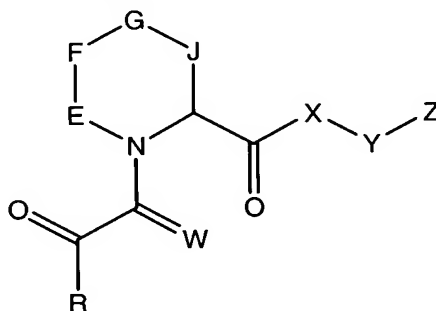


said tertiary amine is  $\text{NR}_4\text{R}_5\text{R}_6$ , wherein  $\text{R}_4$ ,  $\text{R}_5$ , and  $\text{R}_6$  are independently selected from the group consisting of  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl or  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of  $\text{C}_1$ - $\text{C}_6$  straight or branched chain alkyl,  $\text{C}_2$ - $\text{C}_6$  straight or branched chain alkenyl,  $\text{C}_3$ - $\text{C}_8$  cycloalkyl,  $\text{C}_5$ - $\text{C}_7$  cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with  $\text{C}_1$ - $\text{C}_4$  alkyl,  $\text{C}_2$ - $\text{C}_4$  alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH,  $\text{NR}_1$ , S, SO, or  $\text{SO}_2$ ;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$\text{R}_1$  and  $\text{R}_3$  are independently hydrogen,  $\text{C}_1$ - $\text{C}_4$  straight or branched chain alkyl,  $\text{C}_3$ - $\text{C}_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

128. A method as claimed in Claim 127 in which the sensorineurotrophic compound is a compound of formula XI:



(XI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>1</sub>;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>

straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said  
5 ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

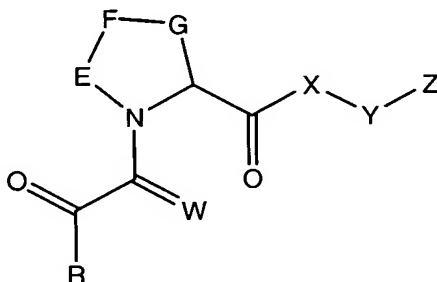
said aromatic amine is pyridyl, pyrimidyl, quinolinyl, and isoquinolinyl, which is either  
10 unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy,  
15 phenoxy, benzyloxy, and amino;

said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl  
20 is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

30 Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

$R_1$  and  $R_3$  are independently hydrogen,  $C_1$ - $C_4$  straight or branched chain alkyl,  $C_3$ - $C_4$  straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 129. A method as claimed in Claim 127 in which the sensorineurotrophic compound is a compound of formula XII:



(XII)

- 10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently  $CH_2$ , O, S, SO,  $SO_2$ , NH or  $NR_1$ ;

W is O, S,  $CH_2$ , or  $H_2$ ;

- 15 R is  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, or  $Ar_1$ , which is optionally substituted with one or more substituent(s) independently selected from the group consisting of  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl, hydroxy,  $C_3$ - $C_8$  cycloalkyl,  $C_5$ - $C_7$  cycloalkenyl, and  $Ar_1$ ;

$Ar_1$  is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s)

- 25 independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl,  $C_2$ - $C_4$  alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted  
5 with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl,  
10 cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

15 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain  
20 containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

said aromatic amine is pyridyl, pyrimidyl,  
25 quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
30 branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

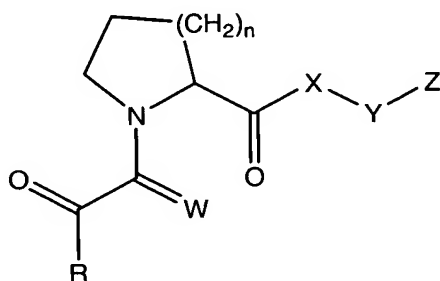
said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight

or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

R<sub>1</sub> and R<sub>3</sub> are independently hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

130. A method as Claimed in Claim 127 in which the sensorineurotrophic compound is a compound of formula XIII:



(XIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

n is 1, 2, or 3, forming a 5-7 member heterocyclic ring;

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>1</sub>;

Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain

containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

5        said aromatic amine is pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-  
10 C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

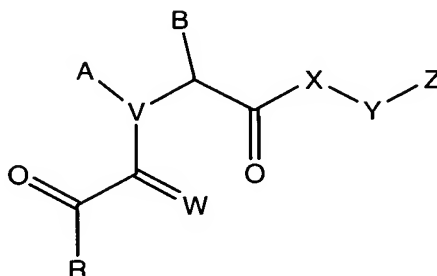
      said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of  
15 C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or  
20 branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of  
25 said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

      Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

30        R<sub>1</sub> and R<sub>3</sub>, independently, are hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.



131. A method as claimed in Claim 115 in which the sensorineurotrophic agent may be a compound of formula XIV:



(XIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

A and B, together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>7</sub>;

R<sub>7</sub> is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>3</sub>, wherein R<sub>7</sub> is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkylthio, sulfhydryl, amino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, aminocarboxyl, and Ar<sub>4</sub>;

Ar<sub>3</sub> and Ar<sub>4</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members;

wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and

W is O, S, CH<sub>2</sub>, or H<sub>2</sub>;

5 R is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, which is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl,  
10 hydroxy, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 1-indolyl, 2-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, having one or  
15 more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

20 X is O, NH, NR<sub>1</sub>, S, CH, CR<sub>1</sub>, or CR<sub>1</sub>R<sub>3</sub>;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected  
25 from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub>  
30 alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Z is an aromatic amine or a tertiary amine oxidized to a corresponding N-oxide;

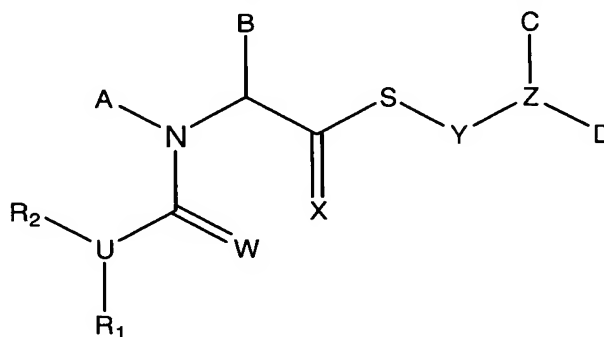
10 said aromatic amine is selected from the group consisting of pyridyl, pyrimidyl, quinolinyl, or isoquinolinyl, which is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, hydroxy,  
15 nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

said tertiary amine is NR<sub>4</sub>R<sub>5</sub>R<sub>6</sub>, wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are independently selected from the group consisting of  
20 C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub>  
25 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl, cycloalkenyl, or Ar is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, hydroxy, or carbonyl oxygen; wherein any carbon atom of said alkyl, alkenyl,  
30 cycloalkyl, cycloalkenyl, or Ar is optionally replaced with O, NH, NR<sub>1</sub>, S, SO, or SO<sub>2</sub>;

Ar is selected from the group consisting of pyrrolidinyl, pyridyl, pyrimidyl, pyrazyl, pyridazyl, quinolinyl, and isoquinolinyl; and

R<sub>1</sub> and R<sub>3</sub> are independently hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, or Y-Z.

- 5 132. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula XV:



10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more additional heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>3</sub>;

X is either O or S;

20 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 25 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

5           C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
10 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy,  
15 C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein  
20 any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

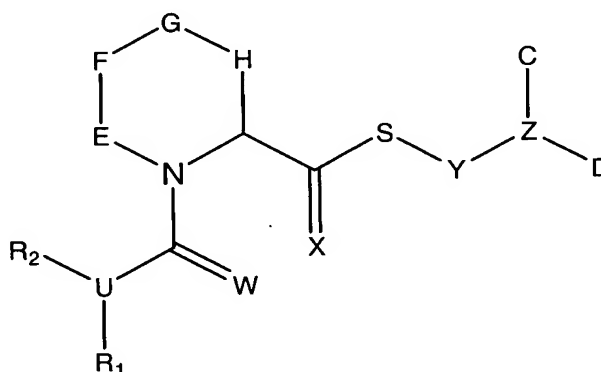
25           when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more  
30           substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and  
            when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub>

straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub>

- 5 cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

- 10 133. A method as claimed in Claim 132 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, 15 oxazolyl, thiazolyl, pyrazolyl, and thienyl.

134. A method as claimed in Claim 132 in which the sensorineurotrophic compound is a compound of formula XVI:



(XVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

- 25 E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH, or NR<sub>3</sub>;  
X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
5 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulphydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
10 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
15 bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
20 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain  
25 alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso,  
30 phenoxy, sulphydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8



members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a  
5 corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with  
10 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or  
15 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
25 thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or  
30 alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

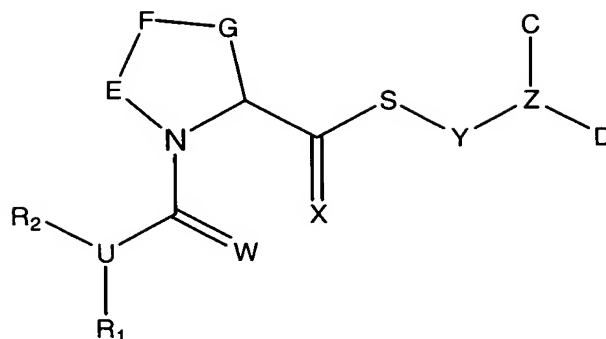
U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and

when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

135. A method as claimed in Claim 134 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

136. A method as claimed in Claim 132 in which the sensorineurotrophic compound is a compound of formula XVII:



(XVII)

or a pharmaceutically acceptable salt, ester, or solvate  
 5 thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>,  
 NH, and NR<sub>3</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
 10 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
 wherein any carbon atom of said alkyl or alkenyl is  
 optionally substituted in one or more position(s) with  
 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester,  
 thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano,  
 15 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
 a carbonyl, or wherein any carbon atom of said alkyl or  
 alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or  
 SO<sub>2</sub>;

20 R<sub>3</sub> is selected from the group consisting of  
 hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub>  
 straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>  
 bridging alkyl wherein a bridge is formed between the  
 nitrogen and a carbon atom of said alkyl or alkenyl chain  
 25 containing said heteroatom to form a ring, wherein said  
 ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s) independently selected from the group

5 consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-

10 ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and

15 heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or

20 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is

25 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form

30 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or

branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

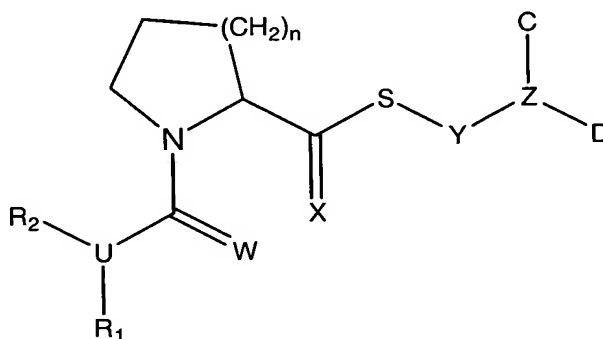
when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken

together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

5

137. A method as claimed in Claim 136 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, 10 imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

138. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula XVIII:



15

(XVIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

20

n is 1, 2 or 3;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is 25 optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,

sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

5        R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain  
10        containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more  
15        substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
20        cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formamido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester,  
25        thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties, including alicyclic and aromatic structures; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group  
30        consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,

wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano,  
5 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

10 C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
15 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, alkoxy, C<sub>2</sub>-C<sub>6</sub>-  
20 alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of  
25 said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

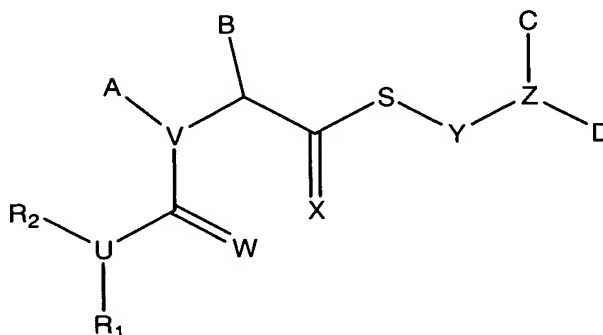
when U is O, then R<sub>1</sub> is a lone pair of electrons  
30 and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain or alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more



substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

139. A method as claimed in Claim 138 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

140. A method as claimed in Claim 116 in which the sensorineurotrophic compound is a compound of formula XIX:



(XIX)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

R<sub>3</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with

amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form  
5 a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
10 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or  
15 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or  
20 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>; and

25 A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to the nitrogen atom, one or more additional heteroatom(s) independently selected from the  
30 group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>3</sub>;

X is either O or S;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring

is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylamino, amido, amino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, azo, benzyloxy, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>1</sub>-C<sub>9</sub> alkoxy, C<sub>2</sub>-C<sub>9</sub> alkenyloxy, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, carbonyl, carboxy, cyano, diazo, C<sub>1</sub>-C<sub>6</sub>-ester, formanilido, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, imino, isocyano, isonitrilo, nitrilo, nitro, nitroso, phenoxy, sulfhydryl, sulfonylsulfoxy, thio, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, thiocyano, thio-C<sub>1</sub>-C<sub>6</sub>-ester, thioformamido, trifluoromethyl, and carboxylic and heterocyclic moieties; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; and wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>

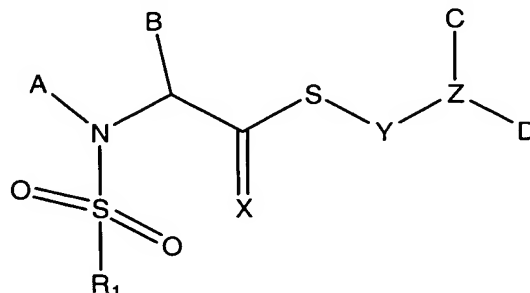
cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

W is O or S; and

U is either O or N, provided that:

when U is O, then R<sub>1</sub> is a lone pair of electrons and R<sub>2</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; and when U is N, then R<sub>1</sub> and R<sub>2</sub> are, independently, selected from the group consisting of hydrogen, Ar, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>7</sub>-C<sub>12</sub> bi- or tri-cyclic carbocycle, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is substituted with one or more substituent(s) independently selected from the group consisting of Ar and C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or R<sub>1</sub> and R<sub>2</sub> are taken together to form a heterocyclic 5 or 6 membered ring selected from the group consisting of pyrrolidine, imidazolidine, pyrazolidine, piperidine, and piperazine.

141. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula XX:



(XX)

5 a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring  
 10 containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
 15 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano,  
 20 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>;

25 R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the

nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or  
5 tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group  
10 consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl,  
15 wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl,  
20 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is  
25 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or  
30 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or

sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally  
5 replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or  
10 more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-  
15 ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

20

142. A method as claimed in claim 141 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl,  
25 isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

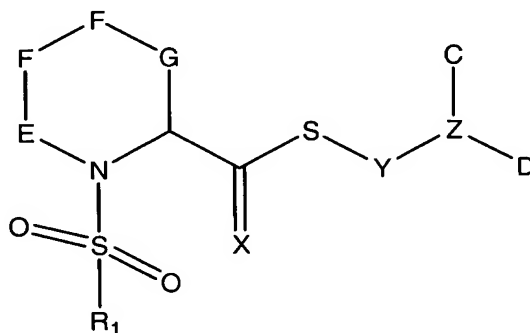
143. A method as claimed in Claim 142 in which A and B, together with the nitrogen and carbon atoms to which they  
30 are respectfully attached, form a 6 membered saturated or unsaturated heterocyclic ring; and R<sub>2</sub> is C<sub>4</sub>-C<sub>7</sub> branched chain alkyl, C<sub>4</sub>-C<sub>7</sub> cycloalkyl, phenyl, or 3,4,5-trimethoxyphenyl.



144. A method as claimed in Claim 141 in which the sensorineurotrophic compound is selected from the group consisting of:

- 3-(*para*-Methoxyphenyl)-1-propylmercaptyl (2*S*)-N-(benzenesulfonyl)pyrrolidine-2-carboxylate;  
 3-(*para*-Methoxyphenyl)-1-propylmercaptyl (2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;  
 3-(*para*-Methoxyphenyl)-1-propylmercaptyl (2*S*)-N-( $\alpha$ -toluenesulfonyl)pyrrolidine-2-carboxylate;  
 1,5-Diphenyl-3-pentylmercaptyl-N-(*para*-toluenesulfonyl)pipecolate; and  
 pharmaceutically acceptable salts and solvates thereof.

145. A method as claimed in Claim 141 in which the sensorineurotrophic compound is a compound of formula XXI:



(XXI)

- or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, G and J are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

- Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is

optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 5 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of 10 hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said 15 ring is optionally fused to an Ar group;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with 20 amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl 25 is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 30 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

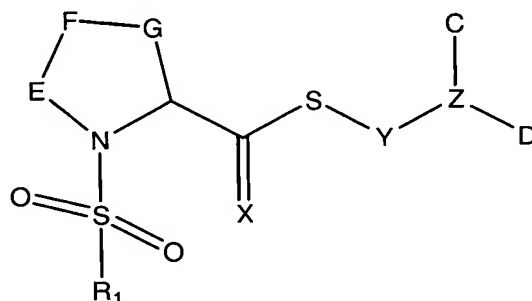
R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

146. A method as claimed in Claim 145 in which Ar is selected from the group consisting of phenyl, benzyl,

naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

5

147. A method as claimed in Claim 141 in which the sensorineurotrophic agent is a compound of formula XXII:



(XXII)

10 or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

E, F, and G are independently CH<sub>2</sub>, O, S, SO, SO<sub>2</sub>, NH or NR<sub>2</sub>;

X is either O or S;

15 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-  
20 ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O,  
25 NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub>

bridging alkyl wherein a bridge is formed between the nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

5 Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6  
10 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
15 alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-  
20 alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

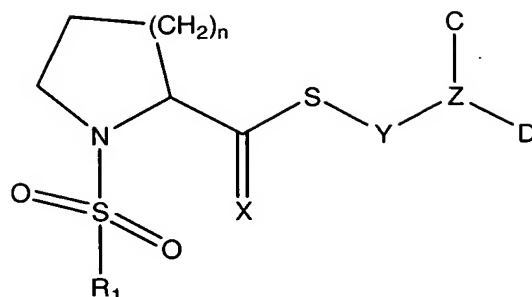
25 C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub>  
30 cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or

more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

148. A method as claimed in Claim 147 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

149. A method as claimed in Claim 141 in which the sensorineurotrophic compound is a compound of formula XXIII:



(XXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5        n is 1, 2 or 3;

      X is either O or S;

      Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
 10 optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 15 or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

      Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is  
 20 optionally substituted in one or more position(s) with amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfonyl,  
 25 or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
5 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
10 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
15 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is  
20 optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>4</sub> alkyl,  
25 C<sub>2</sub>-C<sub>4</sub> alkenyl, or hydroxy; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and

30 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group

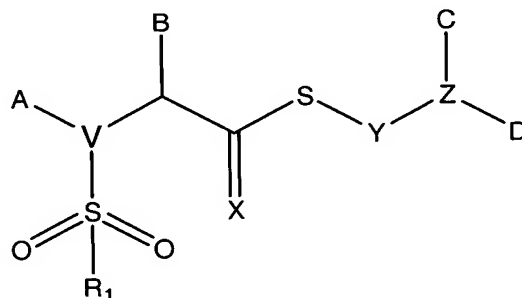


consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-ester, thio-(C<sub>1</sub>-C<sub>6</sub>)-ester, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>3</sub>, S, SO, or SO<sub>2</sub>.

10

150. A method as claimed in Claim 149 in which Ar is selected from the group consisting of phenyl, benzyl, naphthyl, indolyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, furyl, fluorenyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, pyrazolyl, and thienyl.

151. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula XXIV:



(XXIV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25 V is CH, N, or S;

A and B, together with the nitrogen and carbon atoms to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring

containing, in addition to the nitrogen atom, one or more heteroatom(s) independently selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR<sub>2</sub>;

X is either O or S;

5 Y is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano,  
10 nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or  
15 SO<sub>2</sub>;

R<sub>2</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, C<sub>3</sub>-C<sub>4</sub> straight or branched chain alkenyl or alkynyl, and C<sub>1</sub>-C<sub>4</sub> bridging alkyl wherein a bridge is formed between the  
20 nitrogen and a carbon atom of said alkyl or alkenyl chain containing said heteroatom to form a ring, wherein said ring is optionally fused to an Ar group;

Ar is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring  
25 is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein the heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S; wherein any aromatic or  
30 tertiary alkyl amine is optionally oxidized to a corresponding N-oxide;

Z is a direct bond, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein any carbon atom of said alkyl or alkenyl is

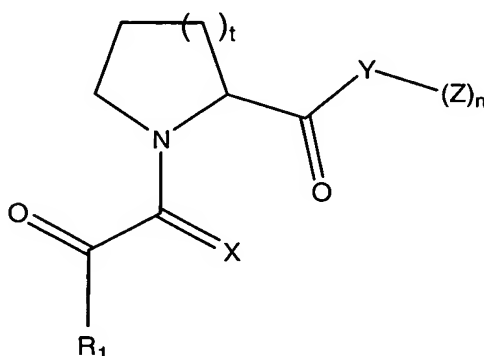
optionally substituted in one or more position(s) with amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, 5 sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfonyl, or oxygen to form a carbonyl, or wherein any atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>;

C and D are independently hydrogen, Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or 10 branched chain alkenyl; wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group consisting of C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, carbonyl oxygen, and Ar; wherein said alkyl, alkenyl, cycloalkyl or 15 cycloalkenyl is optionally substituted with C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, hydroxy, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, or 20 sulfonyl; wherein any carbon atom of said alkyl or alkenyl is optionally substituted in one or more position(s) with oxygen to form a carbonyl; or wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>; and 25 R<sub>1</sub> is selected from the group consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is optionally substituted with one or more substituent(s) independently selected from the group 30 consisting of Ar, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, amino, halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, carbonyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-ester, thio-C<sub>1</sub>-C<sub>6</sub>-ester, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-alkenoxy, cyano, nitro, imino,

C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, and sulfonyl, wherein any carbon atom of said alkyl or alkenyl is optionally replaced with O, NH, NR<sub>2</sub>, S, SO, or SO<sub>2</sub>.

5

152. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula XXV:



10

(XXV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

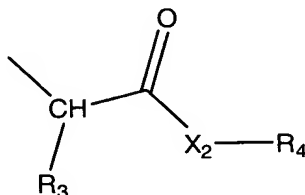
Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl,

C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z,  
5 hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more  
substituent(s) independently selected from the group  
10 consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



15 wherein:

R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain  
20 alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub>  
25 straight or branched chain alkenyl substituted with phenyl;

n is 1 or 2, and;

t is 1, 2 or 3.

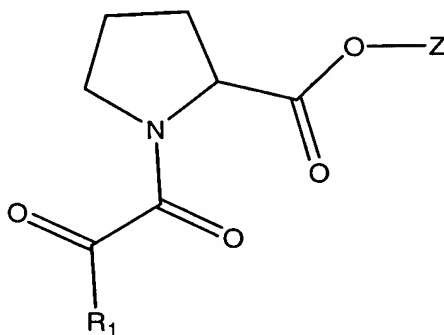
153. A method as claimed in Claim 152 in which the compound is selected from the group consisting of:

- 3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 5        3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3,4,5-trimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 10       3-(3,4,5-trimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4,5-dichlorophenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4,5-dichlorophenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 15       3-(4,5-methylenedioxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 3-(4,5-methylenedioxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 20       3-cyclohexyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-cyclohexyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- (1*R*)-1,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 25       (1*R*)-1,3-diphenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- (1*R*)-1-cyclohexyl-3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 30       (1*R*)-1-cyclohexyl-3-phenyl-1-prop-2-(*E*)-enyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;

- (1*R*)-1-(4,5-dichlorophenyl)-3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-2-cyclohexyl)ethyl-2-pyrrolidinecarboxylate;
- 5 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-4-cyclohexyl)butyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate;
- 10 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-2-[2-thienyl])ethyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(1,2-dioxo-2-phenyl)ethyl-2-pyrrolidinecarboxylate;
- 15 1,7-diphenyl-4-heptyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxo-4-hydroxybutyl)-2-pyrrolidinecarboxylate;
- 20 3-phenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxamide;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine ethyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-leucine ethyl ester;
- 25 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylglycine ethyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine phenyl ester;
- 30 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-phenylalanine benzyl ester;
- 1-[1-(3,3-dimethyl-1,2-dioxopentyl)-L-proline]-L-isoleucine ethyl ester; and

pharmaceutically acceptable salts, esters, and solvates thereof.

154. A method as claimed in Claim 152 in which the  
5 sensorineurotrophic compound is a compound of formula XXVI:



(XXVI)

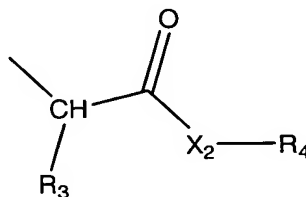
or a pharmaceutically acceptable salt, ester, or solvate  
10 thereof, wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents  
15 independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro,  
20 trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino;



Z is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



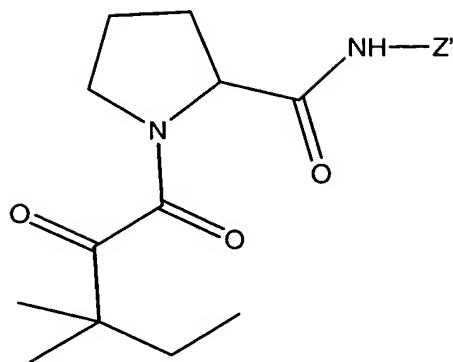
wherein:

10 R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

15 R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with  
20 phenyl.

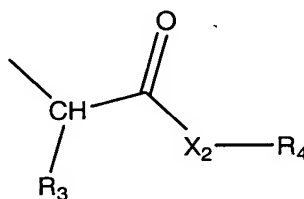
155. A method as claimed in Claim 115 in which the sensorineurotrophic agent may be a compound of formula XXVII:



(XXVII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

5           Z' is the fragment



wherein:

10           R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or unsubstituted Ar<sub>1</sub>, wherein said alkyl is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

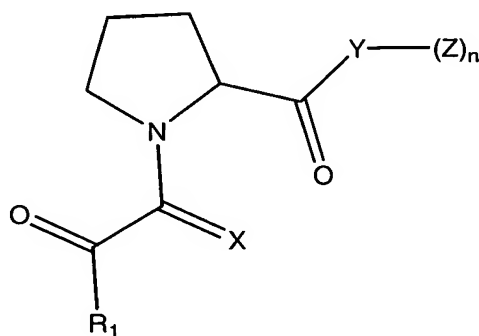
          X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl;

15           R<sub>4</sub> is selected from the group consisting of phenyl, benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and

20           Ar<sub>1</sub> is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, wherein said Ar<sub>1</sub> is unsubstituted or substituted with one or more substituent(s) independently

selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, and amino.

156. A method as claimed in Claim 152 in which the sensorineurotrophic agent may also be a compound of formula XXVIII:



(XXVIII)

wherein:

R<sub>1</sub> is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl or Ar<sub>1</sub>, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>3</sub>-C<sub>6</sub> cycloalkyl or Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently selected from the group consisting of 2-furyl, 2-thienyl, and phenyl;

X is selected from the group consisting of oxygen and sulfur;

Y is oxygen or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl;

each Z, independently, is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of 2-furyl, 2-thienyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, pyridyl, and phenyl, each having one or more

substituent(s) independently selected from the group consisting of hydrogen and C<sub>1</sub>-C<sub>4</sub> alkoxy; and n is 1 or 2.

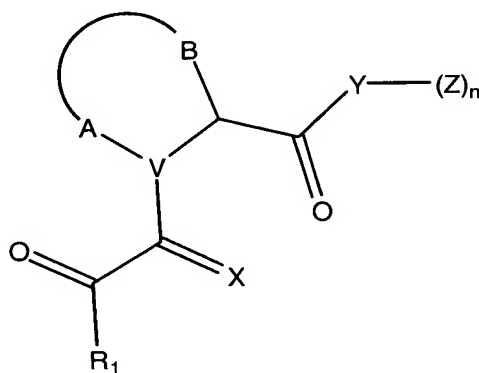
- 5 157. A method as claimed in Claim 156 in which the compound is selected from the group consisting of:
- 3-(2,5-dimethoxyphenyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(2,5-dimethoxyphenyl)-1-prop-2-(*E*)-enyl (2*S*)-1-  
10 (3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidine-carboxylate;
- 2-(3,4,5-trimethoxyphenyl)-1-ethyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 15 3-(2-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(4-pyridyl)-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-phenyl-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 20 3-phenyl-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidine-carboxylate;
- 25 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate;
- 3-(3-pyridyl)-1-propyl (2*S*)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate;
- 30 3-(3-pyridyl)-1-propyl (2*S*)-N-([2-thienyl]glyoxyl)pyrrolidinecarboxylate;
- 3,3-diphenyl-1-propyl (2*S*)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate;

3,3-diphenyl-1-propyl (2*S*)-1-cyclohexylglyoxyl-  
2-pyrrolidinecarboxylate;

3,3-diphenyl-1-propyl (2*S*)-1-(2-thienyl)glyoxyl-2-  
pyrrolidinecarboxylate; and

5        pharmaceutically acceptable salts, esters, and  
solvates thereof.

158. A method as claimed in Claim 115 in which the  
sensorineurotrophic compound is a compound of formula  
10    XXIX:



(XXIX)

or a pharmaceutically acceptable salt, ester, or solvate  
thereof, wherein:

15        V is CH, N, or S;

A and B, together with V and the carbon atom to  
which they are respectively attached, form a 5-7 membered  
saturated or unsaturated heterocyclic ring containing, in  
addition to V, one or more heteroatom(s) independently  
20    selected from the group consisting of O, S, SO, SO<sub>2</sub>, N,  
NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl,  
C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub>  
cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is  
25    either unsubstituted or substituted with one or more  
substituent(s) independently selected from the group  
consisting of halo, halo-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl,

carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

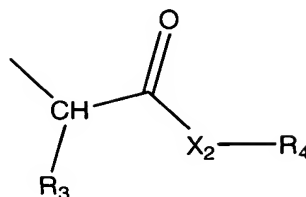
R<sub>1</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar<sub>1</sub>, wherein said R<sub>1</sub> is unsubstituted or substituted with one or more substituents independently selected from the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, hydroxy, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted with one or more substituent(s); wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

X is O, S, CH<sub>2</sub> or H<sub>2</sub>;

Y is O or NR<sub>2</sub>, wherein R<sub>2</sub> is a direct bond to a Z, hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl; and

each Z, independently, is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said Z is substituted with one or more substituent(s) independently selected from the group consisting of Ar<sub>1</sub>, C<sub>3</sub>-C<sub>8</sub> cycloalkyl, and C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl; or Z is the fragment



wherein:

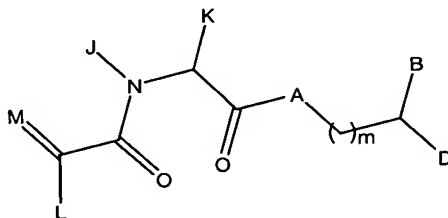
R<sub>3</sub> is C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl which is unsubstituted or substituted with C<sub>3</sub>-C<sub>8</sub> cycloalkyl or Ar<sub>1</sub>;

5 X<sub>2</sub> is O or NR<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, and C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

R<sub>4</sub> is selected from the group consisting of phenyl,  
10 benzyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl substituted with phenyl, and C<sub>2</sub>-C<sub>5</sub> straight or branched chain alkenyl substituted with phenyl; and,  
15 n is 1 or 2.

159. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula (LV):

20



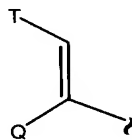
(LV)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

25 m is 0-3;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



15

wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

20 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

25 Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in

30 either or both rings a total of 1-4 heteroatom(s) independently selected from the group consisting of oxygen, nitrogen and sulfur; wherein Ar contains 1-3



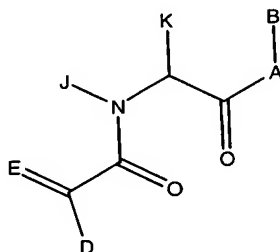
substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, hydroxymethyl, nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
5 (C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, 1,2-methylenedioxy, carbonyl, and phenyl;

L is either hydrogen or U; M is either oxygen or CH-U, provided that if L is hydrogen, then M is CH-U, or if  
10 M is oxygen then L is U;

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
15 cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or  
20 cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

160. A method as claimed in Claim 115 in which the  
25 sensorineurotrophic compound is a compound of formula (LVI):

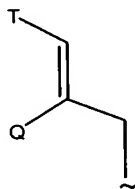


(LVI)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

A is O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

5 B is hydrogen, CHL-Ar, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, Ar substituted C<sub>1</sub>-C<sub>6</sub> alkyl or C<sub>2</sub>-C<sub>6</sub> alkenyl, or



10

wherein L and Q are independently hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and  
15 T is Ar or C<sub>5</sub>-C<sub>7</sub> cyclohexyl substituted at positions 3 and 4 with substituents independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
20

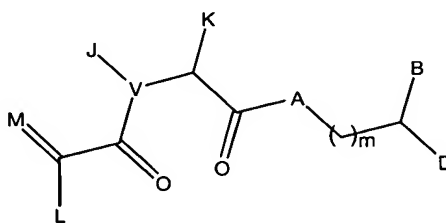
Ar is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl having 1-3 substituent(s) independently selected from the group  
25 consisting of hydrogen, halo, hydroxy, nitro, CF<sub>3</sub>, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, amino, and phenyl.

D is hydrogen or U; E is oxygen or CH-U, provided that if D is hydrogen, then E is CH-U, or if E is oxygen, then D is U;

U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub>-cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, 2-indolyl, 3-indolyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

161. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula LVIII:



(LVIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s)

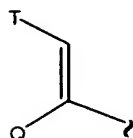
selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfhydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently hydrogen, Ar, C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, or Ar substituted C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein in each case, one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of oxygen, sulfur, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



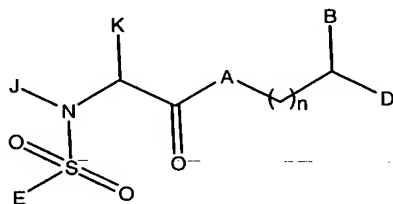
- wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
5 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
branched chain alkenyl; and  
T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
positions 3 and 4 with substituents  
independently selected from the group  
10 consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
Ar is selected from the group consisting of 1-  
naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl and phenyl,  
15 monocyclic and bicyclic heterocyclic ring systems with  
individual ring sizes being 5 or 6 which contain in  
either or both rings a total of 1-4 heteroatom(s)  
independently selected from the group consisting of  
oxygen, nitrogen and sulfur; wherein Ar contains 1-3  
20 substituent(s) independently selected from the group  
consisting of hydrogen, halo, hydroxy, hydroxymethyl,  
nitro, CF<sub>3</sub>, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched  
chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-  
(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub>  
25 straight or branched chain alkenyl), O-benzyl, O-phenyl,  
amino, 1,2-methylenedioxy, carbonyl, and phenyl;  
L is either hydrogen or U; M is either oxygen or CH-  
U, provided that if L is hydrogen, then M is CH-U, or if  
M is oxygen then L is U;  
30 U is hydrogen, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain  
alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), C<sub>1</sub>-  
C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or

branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

- 5 J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with oxygen, sulfur, SO, or SO<sub>2</sub>.

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162. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of the formula (LIX):

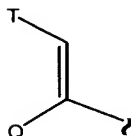


15

(LIX)

or a pharmaceutically acceptable salt, ester or solvate thereof, wherein:

- A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);
- 20 B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s)
- 25 of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

5 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

10 provided that both B and D are not hydrogen;

Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring  
15 sizes being 5 or 6 which contain in either or both rings a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro,

20 trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

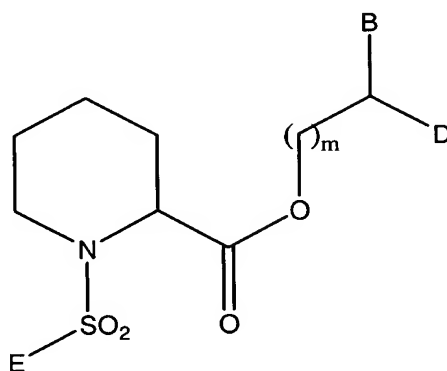
25 E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

30 J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl, or cyclohexylmethyl; or J and K are taken together to form a

5-7 membered heterocyclic ring which is substituted with  
O, S, SO, or SO<sub>2</sub>;

n is 0 to 3.

- 5 163. A method as claimed in Claim 115 in which the  
sensorineurotrophic compound is a compound of Formula  
LXI:

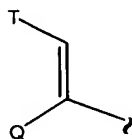


(LXI)

10

or a pharmaceutically acceptable salt, ester or solvate  
thereof, wherein:

- B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub>  
straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
15 branched chain alkenyl, wherein said alkyl or alkenyl is  
unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
cycloalkenyl or Ar, and wherein one or two carbon atom(s)  
of said alkyl or alkenyl may be substituted with one or  
two heteroatom(s) independently selected from the group  
20 consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable  
substitution patterns, or





wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl; and

5 T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at positions 3 and 4 with one or more substituent(s) independently selected from the group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub> alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;

provided that both B and D are not hydrogen;

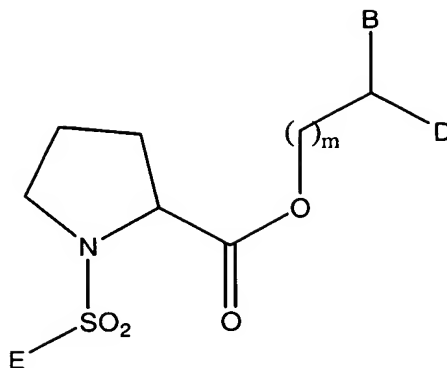
10 Ar is selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and bicyclic heterocyclic ring systems with individual ring sizes being 5 or 6 which contain in either or both rings  
15 a total of 1-4 heteroatoms independently selected from the group consisting of O, N, and S; wherein Ar contains 1-3 substituent(s) independently selected from the group consisting of hydrogen, halo, hydroxy, nitro, trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
20 branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-(C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;

E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
25 straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar; and

m is 0 to 3.

30

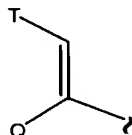
164. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of Formula (LXII):



(LXII)

or a pharmaceutically acceptable salt thereof, wherein:

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub>  
 5 straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
 branched chain alkenyl, wherein said alkyl or alkenyl is  
 unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub>  
 cycloalkenyl, or Ar, and wherein one or two carbon  
 atom(s) of said alkyl or alkenyl may be substituted with  
 10 one or two heteroatom(s) independently selected from the  
 group consisting of O, S, SO, and SO<sub>2</sub> in chemically  
 reasonable substitution patterns, or

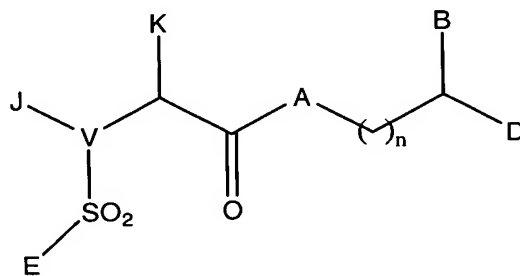


15

wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
 branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
 branched chain alkenyl; and

T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
 20 positions 3 and 4 with one or more  
 substituent(s) independently selected from the  
 group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
 alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
 provided that both B and D are not hydrogen;

165. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of Formula LXIII:



(LXIII)

or a pharmaceutically acceptable salt, ester, or solvate thereof, wherein:

V is CH, N, or S;

J and K, taken together with V and the carbon atom to which they are respectively attached, form a 5-7 membered saturated or unsaturated heterocyclic ring containing, in addition to V, one or more heteroatom(s) selected from the group consisting of O, S, SO, SO<sub>2</sub>, N, NH, and NR;

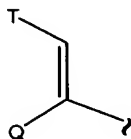
R is either C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, C<sub>3</sub>-C<sub>9</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl, or Ar<sub>1</sub>, wherein R is either unsubstituted or substituted with one or more substituent(s) independently selected from the group consisting of halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, carbonyl, carboxy, hydroxy, nitro, trifluoromethyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>2</sub>-C<sub>4</sub> alkenyloxy, phenoxy, benzyloxy, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulphydryl, amino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, aminocarboxyl, and Ar<sub>2</sub>;

Ar<sub>1</sub> and Ar<sub>2</sub> are independently an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring; wherein the individual ring size is 5-8 members; wherein said heterocyclic ring contains 1-6 heteroatom(s) independently selected from the group consisting of O, N, and S;

A is CH<sub>2</sub>, O, NH, or N-(C<sub>1</sub>-C<sub>4</sub> alkyl);

B and D are independently Ar, hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl, wherein said alkyl or alkenyl is unsubstituted or substituted with C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-C<sub>7</sub> cycloalkenyl or Ar, and wherein one or two carbon atom(s) of said alkyl or alkenyl may be substituted with one or two heteroatom(s) independently selected from the group

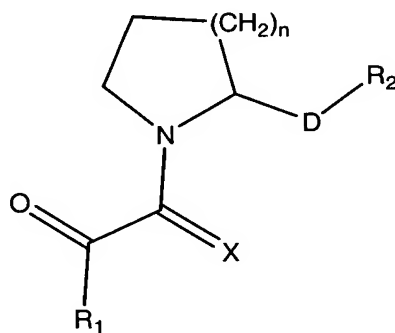
consisting of O, S, SO, and SO<sub>2</sub> in chemically reasonable substitution patterns, or



- 5        wherein Q is hydrogen, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, or C<sub>2</sub>-C<sub>6</sub> straight or  
         branched chain alkenyl; and  
         T is Ar or C<sub>5</sub>-C<sub>7</sub> cycloalkyl substituted at  
         positions 3 and 4 with one or more  
10        substituent(s) independently selected from the  
         group consisting of hydrogen, hydroxy, O-(C<sub>1</sub>-C<sub>4</sub>  
         alkyl), O-(C<sub>2</sub>-C<sub>4</sub> alkenyl), and carbonyl;  
provided that both B and D are not hydrogen;
- Ar is selected from the group consisting of phenyl,  
15        1-naphthyl, 2-naphthyl, 2-furyl, 3-furyl, 2-thienyl, 3-  
         thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, monocyclic and  
         bicyclic heterocyclic ring systems with individual ring  
         sizes being 5 or 6 which contain in either or both rings  
         a total of 1-4 heteroatoms independently selected from  
20        the group consisting of O, N, and S; wherein Ar contains  
         1-3 substituent(s) independently selected from the group  
         consisting of hydrogen, halo, hydroxy, nitro,  
         trifluoromethyl, trifluoromethoxy, C<sub>1</sub>-C<sub>6</sub> straight or  
         branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain  
25        alkenyl, O-(C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl), O-  
         (C<sub>2</sub>-C<sub>4</sub> straight or branched chain alkenyl), O-benzyl, O-  
         phenyl, 1,2-methylenedioxy, amino, carboxyl, and phenyl;
- E is C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub>  
         straight or branched chain alkenyl, C<sub>5</sub>-C<sub>7</sub> cycloalkyl, C<sub>5</sub>-  
30        C<sub>7</sub> cycloalkenyl substituted with C<sub>1</sub>-C<sub>4</sub> straight or  
         branched chain alkyl or C<sub>2</sub>-C<sub>4</sub> straight or branched chain  
         alkenyl, (C<sub>2</sub>-C<sub>4</sub> alkyl or C<sub>2</sub>-C<sub>4</sub> alkenyl)-Ar, or Ar;

J is hydrogen, C<sub>1</sub> or C<sub>2</sub> alkyl, or benzyl; K is C<sub>1</sub>-C<sub>4</sub> straight or branched chain alkyl, benzyl, or cyclohexylmethyl; or J and K are taken together to form a 5-7 membered heterocyclic ring which is substituted with  
5 O, S, SO, or SO<sub>2</sub>;  
n is 0 to 3.

166. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula  
10 (LXIV):



(LXIV)

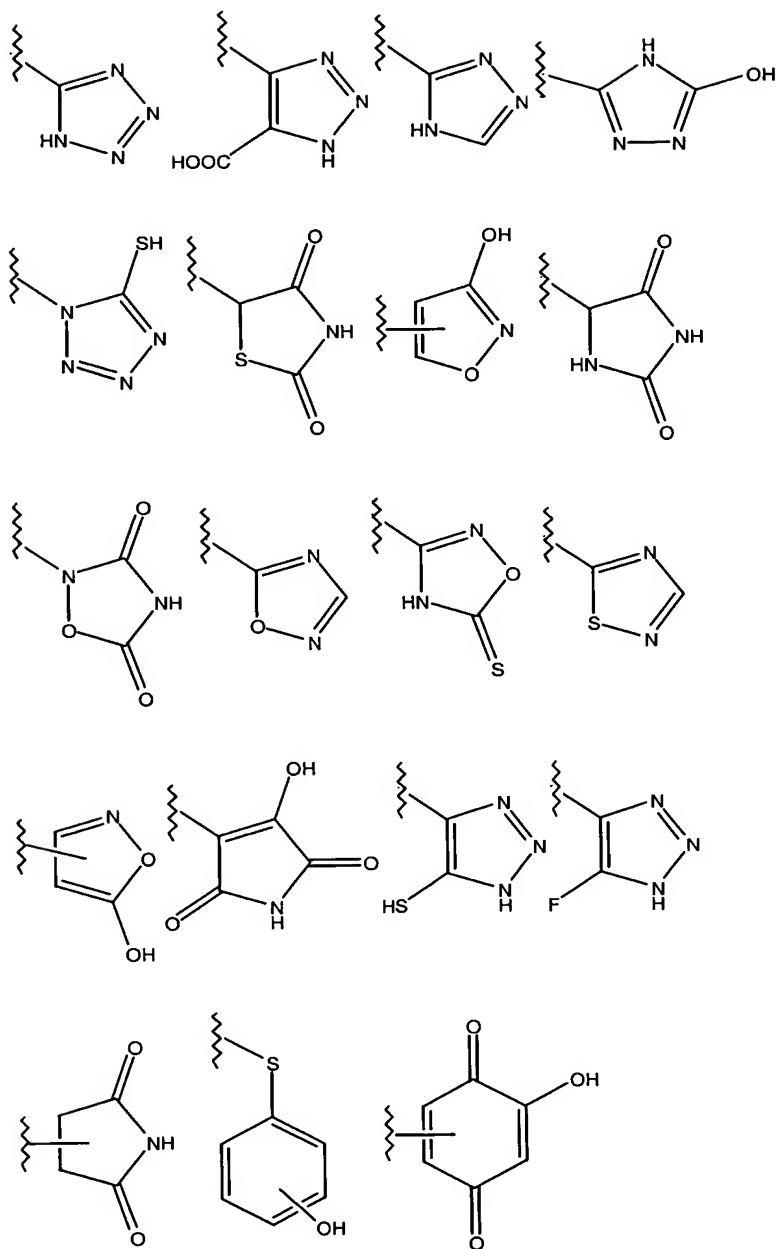
in which:

- n is 1-3;  
15 X is either O or S;  
 $R_1$  is selected from the group consisting of C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;  
20 D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl; and  
 $R_2$  is a carboxylic acid or a carboxylic acid isostere; or a pharmaceutically acceptable salt, ester, or solvate thereof.

25

167. A method as claimed in Claim 166 in which:

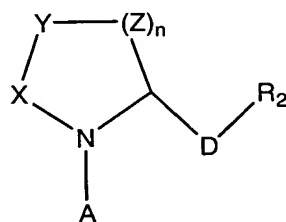
$R_2$  is selected from the group:



- COOH, -SO<sub>3</sub>H, -SO<sub>2</sub>HNR<sup>3</sup>, -PO<sub>2</sub>(R<sup>3</sup>)<sub>2</sub>, -CN, -PO<sub>3</sub>(R<sup>3</sup>)<sub>2</sub>, -OR<sup>3</sup>,  
 -SR<sup>3</sup>, -NHCOR<sup>3</sup>, -N(R<sup>3</sup>)<sub>2</sub>, -CON(R<sup>3</sup>)<sub>2</sub>, -CONH(O)R<sup>3</sup>, -CONHNHSO<sub>2</sub>R<sup>3</sup>,  
 5 -COHNSO<sub>2</sub>R<sup>3</sup>, and -CONR<sup>3</sup>CN wherein R<sup>3</sup> is hydrogen, hydroxy,  
 halo, halo-C<sub>1</sub>-C<sub>6</sub>-alkyl, thiocarbonyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>2</sub>-C<sub>6</sub>-  
 alkenoxy, C<sub>1</sub>-C<sub>6</sub>-alkylaryloxy, aryloxy, aryl-C<sub>1</sub>-C<sub>6</sub>-  
 alkyloxy, cyano, nitro, imino, C<sub>1</sub>-C<sub>6</sub>-alkylamino, amino-  
 C<sub>1</sub>-C<sub>6</sub>-alkyl, sulfhydryl, thio-C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-

alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl.

168. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula (LXV):



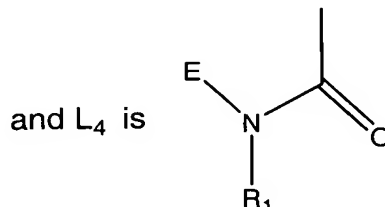
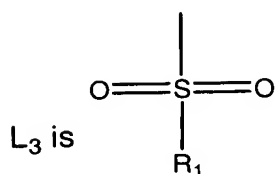
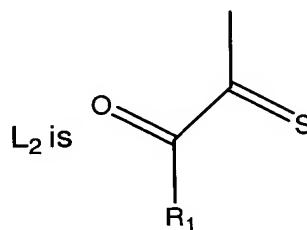
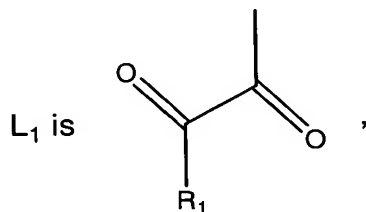
(LXV)

in which

X, Y, and Z are independently selected from the group consisting of C, O, S, or N, provided that X, Y, and Z are not all C;

n is 1-3;

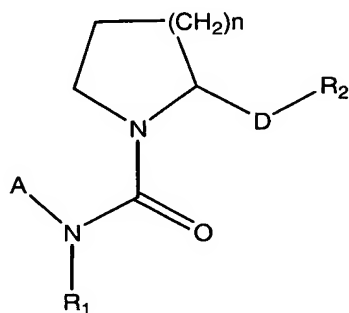
A is selected from the group consisting of L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub>, or L<sub>4</sub>, in which





and  $R_1$  and E, independently, are selected from the group consisting of hydrogen,  $C_1$ - $C_9$  straight or branched chain alkyl,  $C_2$ - $C_9$  straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;  
5  $R_2$  is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents  
10 selected from  $R^3$ , where  
 $R^3$  is hydrogen, hydroxy, halo, halo( $C_1$ - $C_6$ )-alkyl, thiocarbonyl, ( $C_1$ - $C_6$ )-alkoxy, ( $C_2$ - $C_6$ )-alkenoxy, ( $C_1$ - $C_6$ )-alkylaryloxy, aryloxy, aryl-( $C_1$ - $C_6$ )-alkyloxy, cyano, nitro, imino, ( $C_1$ - $C_6$ )-alkylamino, amino-( $C_1$ - $C_6$ )-alkyl,  
15 sulfhydryl, thio-( $C_1$ - $C_6$ )-alkyl, ( $C_1$ - $C_6$ )-alkylthio, sulfonyl,  $C_1$ - $C_6$  straight or branched chain alkyl,  $C_2$ - $C_6$  straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or  $CO_2R^4$  where  $R^4$  is hydrogen or  $C_1$ - $C_9$  straight or branched chain alkyl or  
20 alkenyl;  
or a pharmaceutically acceptable salt, ester, or solvate thereof.

169. A method as claimed in Claim 115 in which the  
25 sensorineurotrophic compound is a compound of formula (LXVI):



(LXVI)

in which:

n is 1-3;

R<sub>1</sub> and A are independently selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, and heterocycle;

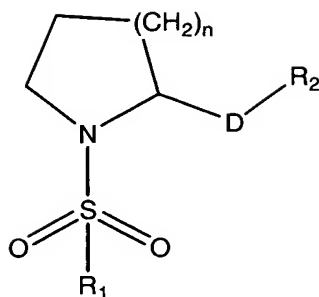
D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl;

R<sub>2</sub> is carboxylic acid or a carboxylic acid isostere; wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents selected from R<sup>3</sup>, where

R<sup>3</sup> is hydrogen, hydroxy, halo, halo(C<sub>1</sub>-C<sub>6</sub>)-alkyl, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenoxy, (C<sub>1</sub>-C<sub>6</sub>)-alkylaryloxy, aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, cyano, nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, and CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl;

or a pharmaceutically acceptable salt, ester, or solvate thereof.

170. A method as claimed in Claim 115 in which the sensorineurotrophic compound is a compound of formula (LXVII):



(LXVII)

in which:

n is 1-3;

5        R<sub>1</sub> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>9</sub> straight or branched chain alkenyl, aryl, heteroaryl, carbocycle, or heterocycle;

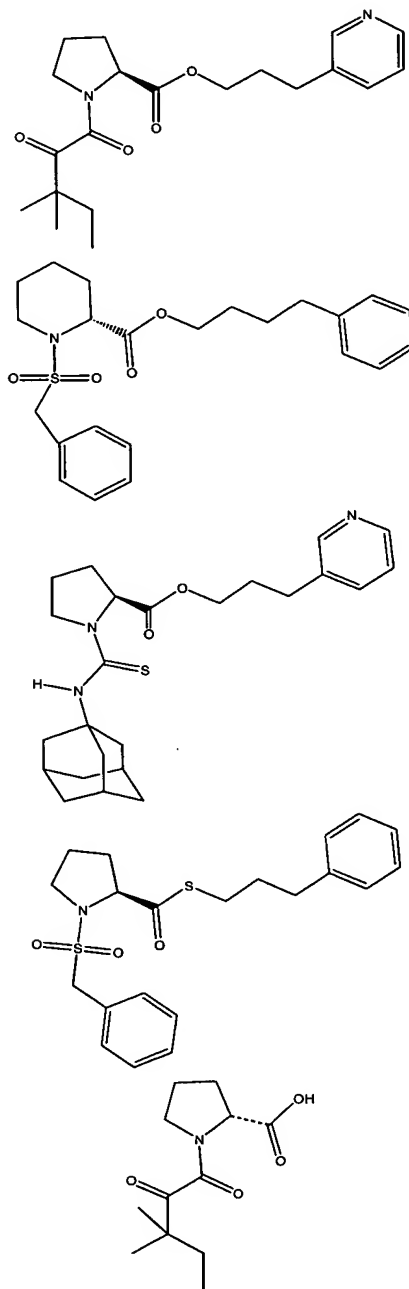
10        D is a bond, or a C<sub>1</sub>-C<sub>10</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl or C<sub>2</sub>-C<sub>10</sub> alkynyl;

      R<sub>2</sub> is a carboxylic acid or a carboxylic acid isostere;

15        wherein said alkyl, alkenyl, alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or carboxylic acid isostere is optionally substituted with one or more substituents selected from R<sup>3</sup>, where

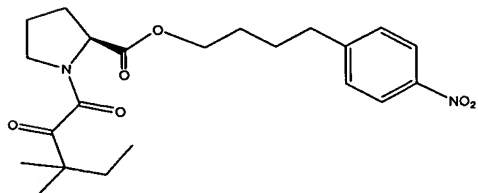
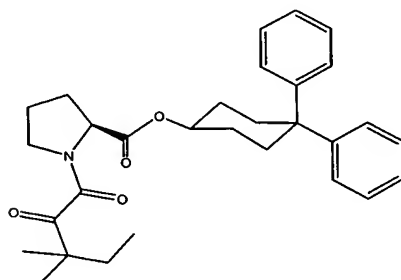
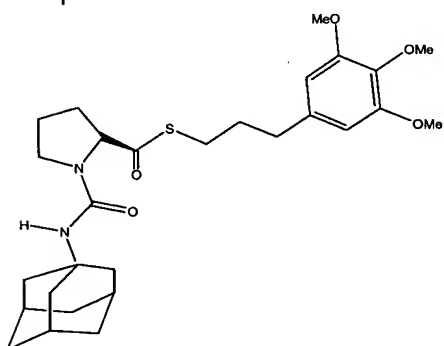
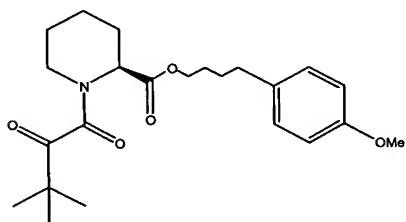
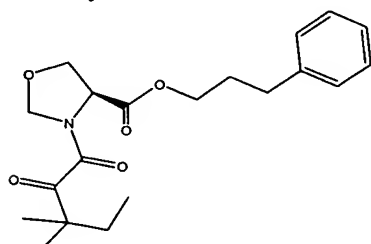
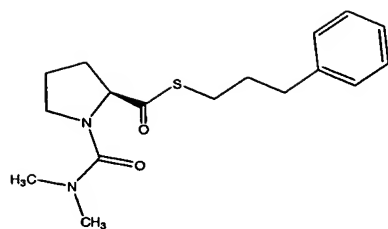
      R<sup>3</sup> is hydrogen, hydroxy, halo, , halo-(C<sub>1</sub>-C<sub>6</sub>)-alkoxy, thiocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>2</sub>-C<sub>6</sub>)-alkenyloxy, (C<sub>1</sub>-C<sub>6</sub>)-alkylaryloxy, aryloxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)-alkyloxy, cyano, 20 nitro, imino, (C<sub>1</sub>-C<sub>6</sub>)-alkylamino, amino-(C<sub>1</sub>-C<sub>6</sub>)-alkyl, sulfhydryl, thio-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>6</sub> straight or branched chain alkyl, C<sub>2</sub>-C<sub>6</sub> straight or branched chain alkenyl or alkynyl, aryl, heteroaryl, carbocycle, heterocycle, or CO<sub>2</sub>R<sup>4</sup> where R<sup>4</sup> is 25 hydrogen or C<sub>1</sub>-C<sub>9</sub> straight or branched chain alkyl or alkenyl;  
or a pharmaceutically acceptable salt, ester or solvate thereof.

171. A method for the prevention or treatment of a vestibular disorder which comprises administering to a warm-blooded animal a sensorineurotrophic compound
- 5 selected from the group comprising:



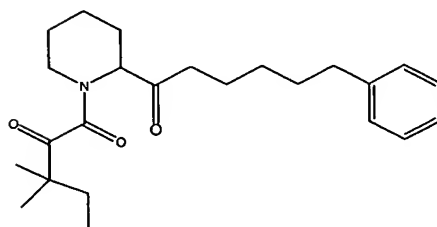
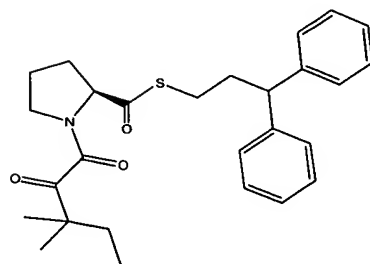
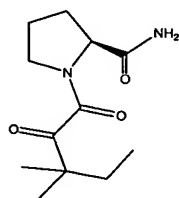
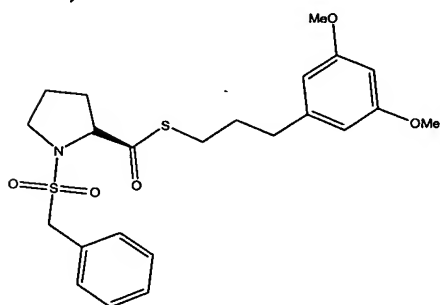
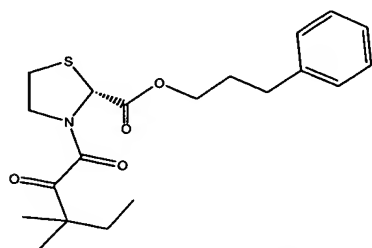
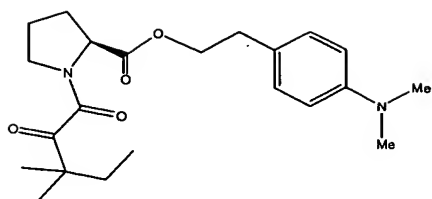
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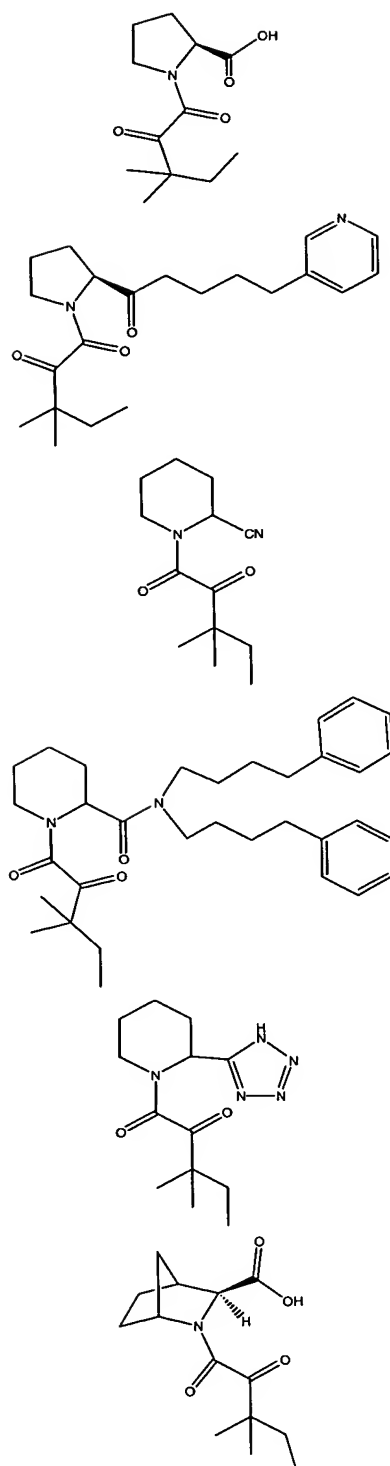
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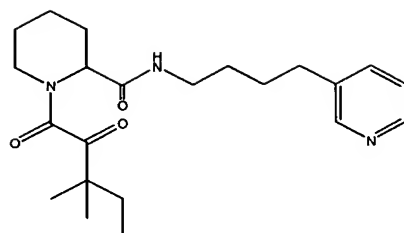
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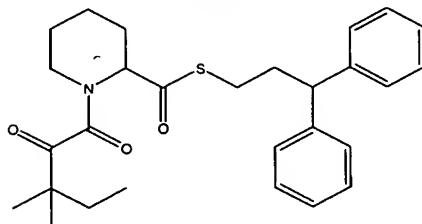


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and



or a pharmaceutically acceptable salt, solvate or ester thereof.